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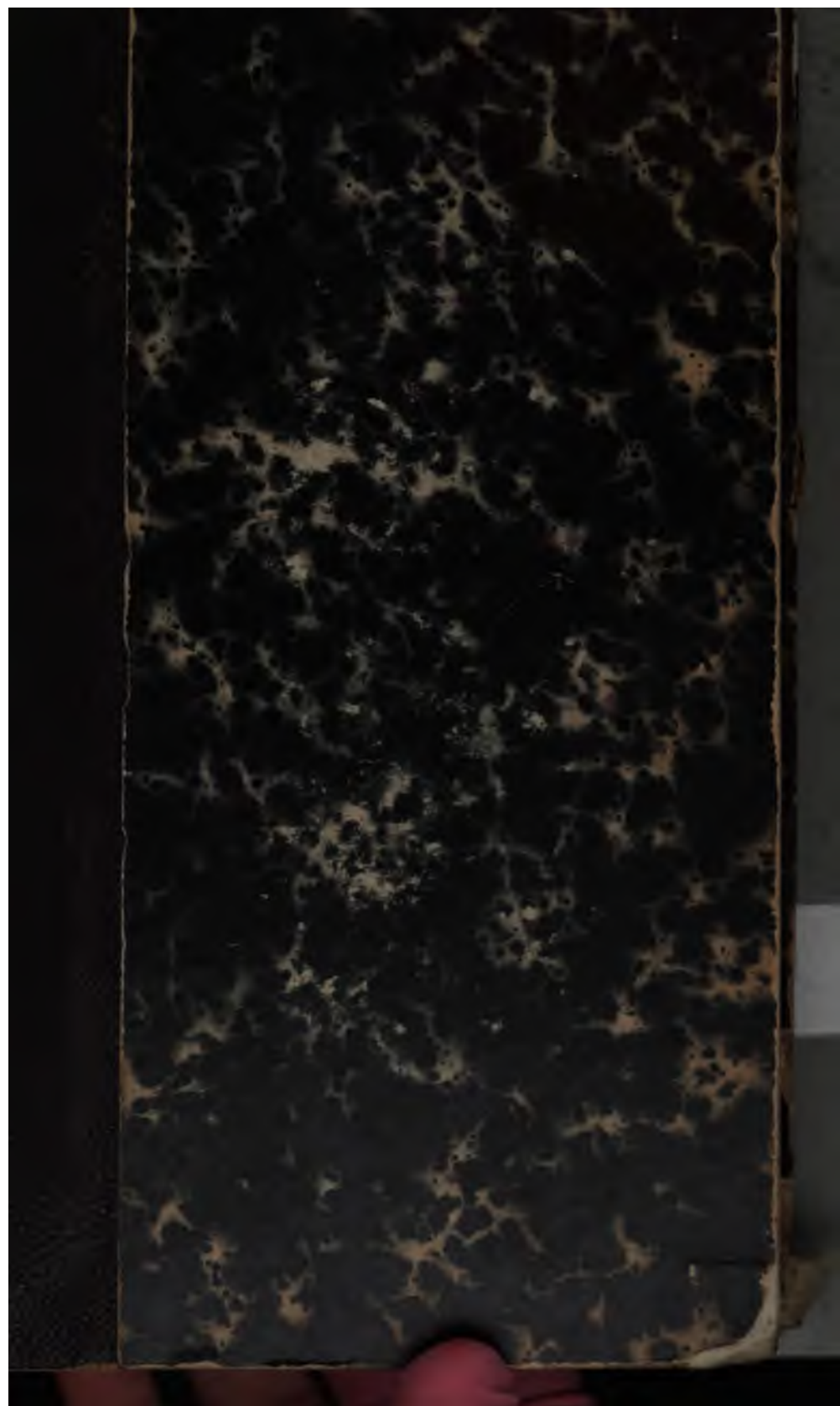
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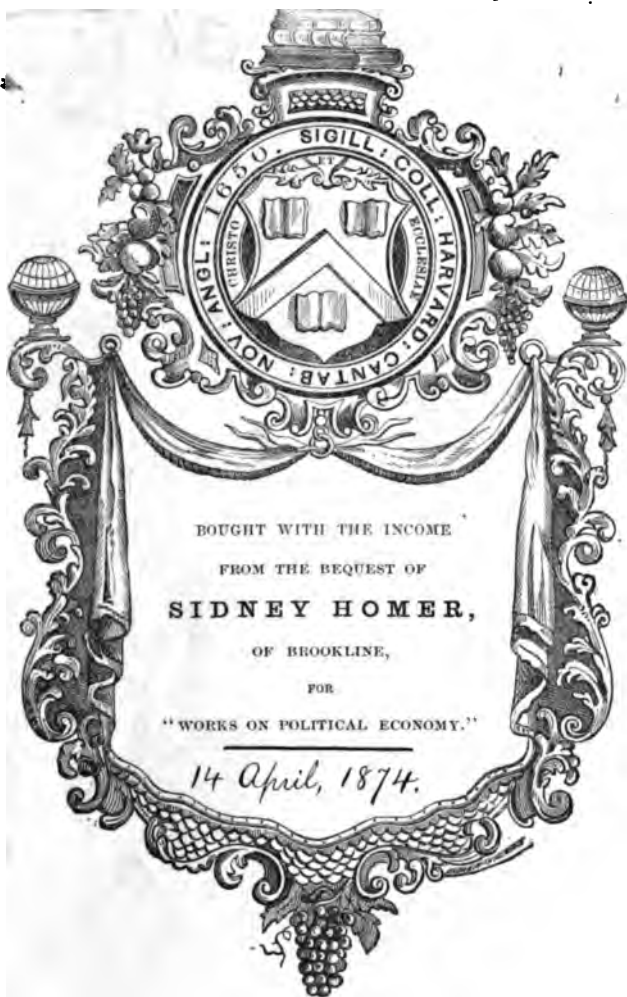
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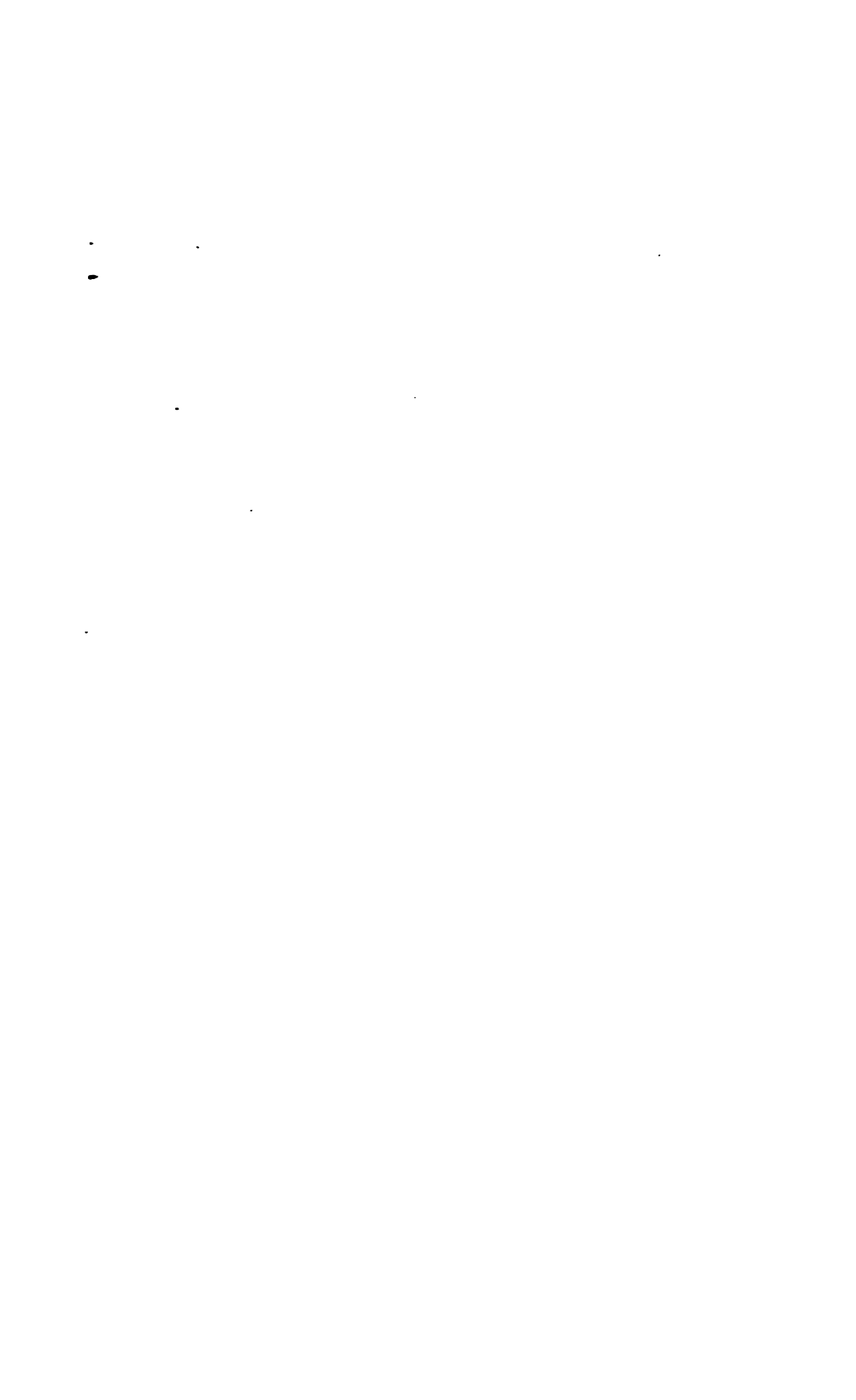
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Bd. May, 1887.







BULLION AND ³¹⁻¹₄₉ FOREIGN EXCHANGES

THEORETICALLY AND PRACTICALLY
CONSIDERED;

FOLLOWED BY A DEFENCE

OF

THE DOUBLE VALUATION,

WITH SPECIAL REFERENCE TO THE PROPOSED SYSTEM

OF

UNIVERSAL COINAGE.

BY

ERNEST SEYD.



LONDON:

EFFINGHAM WILSON, ROYAL EXCHANGE.

1868.

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PART I.

INTRODUCTION.

BULLION and Foreign Exchanges are subjects generally comprised among the contents of higher class books on Practical Arithmetic; though, of course, the consideration given in works of the kind to these interesting topics is necessarily only limited and superficial, at the best. There are several publications on Banking and Commercial Business which go somewhat more deeply into the matter: among others, Gilbert's admirable work, and Laing's 'Theory of Business;' and there are, finally, at least three well known works specially devoted to the study of these most important subjects,—Göschel's 'Theory of the Foreign Exchanges,' Nicholson's 'Science of Exchanges,' and Tate's 'Cambist, or Manual of Exchanges.'

Why then, it might be asked, should the author of the present volume venture upon a field apparently already so well cultivated, which would seem to afford no legitimate opening for him? A brief glance at the nature and scope of the three last-named works will, he believes, show that, notwithstanding their

confessed excellence, neither of the three can be said to fully answer and satisfy all requirements, to make it a complete and perfect guide in all matters relating to Bullion and the Foreign Exchanges; and that there is room left, for another work on the subject, constructed on more comprehensive principles, and more universally adapted to all classes of readers. To supply such a work is the writer's object. The financial and commercial public will judge whether he has brought the necessary qualifications to the task undertaken by him.

We have then, first, Göschen's 'Theory of the Foreign Exchanges,' which may be defined as a general treatise on international commerce, and the effects produced by the ordinary and extraordinary vicissitudes of the same on the Exchange transactions of Foreign countries with England. The book is written in plain, clear language. It bears throughout a strong impress of the writer's personal experience. The views expressed, and the conclusions drawn by him, are lucid and logical, and there are not many of them open to contestation. It is altogether an admirable work, and does the fullest justice to its title,—'The Theory of the Foreign Exchanges.' But, for that very reason, it falls necessarily short of the requirements of the ordinary reader. The author starts upon the supposition that the reader whom he addresses knows all about the elementary ground-work of the subject, and he confines his teaching, accordingly, to the higher and highest branches. There is, for instance, no information given on the

value of Foreign Coins and Monies ; and there are only a few practical examples and illustrations to be found in the book. These omissions and deficiencies cannot but detract, in some measure, from the practical usefulness of the work to that large class of readers who, in their study of Exchange operations, have to begin with the beginning of the subject.

Nicholson's 'Science of Exchanges' is conceived and constructed upon a different principle,—the author using the Catechetical form. The book consists principally of a series of 289 questions and answers, ranging over a wide field, from the first question, "What is value?" to the last, "What should we desire most for the general welfare of all classes in England?" Explanations are given on the subject of Gold, Silver, and Currency ; also some practical illustrations and calculations. The book forms a most excellent Manual, which should be in the hands of every student of Exchanges. Still, it may be questioned whether the Catechetical form, with its inherent dogmatism, is the best calculated to give the student a clear insight into, and a competent knowledge of, a subject of such magnitude and importance, and one so open to difference of opinion on many of the leading points, as the Science of Exchanges. The more so, as the work is slightly tinged with the author's somewhat absolute free-trade views, and bears the impress also of his strong bias to look upon all things from an exclusively British point of view.

We now come to the last of the three special Works on the Science of Exchanges, viz.—Tate's 'Cambist,

or *Manual of Exchanges* ;' the Banker and Merchant's old and trusty friend,* as it is deservedly called. This work is,— in conception, construction, and treatment,— the very opposite to Göschel's book. Whilst the latter is nearly all "Theory," Tate's 'Cambist' is almost exclusively "Practice;" abounding in figures and calculations, practical examples and illustrations of all possible Exchange transactions, single and compound Arbitrations, conversion of Bullion, &c. A considerable portion of the work is taken up with the Weights, Measures, Coins, and Monies of every country in the world, with their British equivalents. In short, every thing in Tate is dry matter-of-fact; and the beginner who would take him for his guide in the study of the Science of Exchanges cannot but sadly feel the absence of all theoretical explanations, which yet are so absolutely indispensable to a proper comprehension of the subject.

The purpose of the author of the present volume then is, to endeavour to give the fullest information on every branch and detail of Exchanges. The title which he gives to his Work—'The Foreign Exchanges Theoretically and Practically Considered'—is intended to express the end which he has in view.

Before entering upon his task, he deems it necessary to explain to the reader how he intends to deal with the matter. The term, "Science of Exchanges," which has been repeatedly used in the foregoing

* Mr. Tate has written other Works on Business Matters. See, among others, his 'Counting-house Guide.'

observations, might perhaps seem to imply a carefully studied systematic arrangement and scientific treatment of the subject, dressed in suitable elegant language to match. The author begs at once to state here, that such is not his intention. He is simply a merchant, with but few hours of leisure at his command, who does not aspire to a reputation for elegance of language and gracefulness of style. He means to treat the matter in the plainest and most practical manner, and to use the simplest and most familiar language, which he deems, in fact, the best suited to the purpose.

Bankers and Merchants well versed in Exchange operations, may, perhaps, feel inclined to object to the frequent repetitions occurring in the book, of principles, facts, and figures, which may be familiar to them. They should bear in mind, however, that the work is intended also for the use of those less advanced in the knowledge of the business, to whom the same repetitions may prove beneficial, as reminders and as guides to a more easy comprehension of its several branches.

A few words will suffice to show and explain the plan followed by the author in the distribution and arrangement of the subject matter of the Book.

The first Chapters are devoted to the consideration of the so-called "Mediums of Exchange." Here the reader will find a full exposition of the author's views upon this important branch of the subject, and of the principles upon which he intends to proceed in his treatment of the same. These are followed by Chapters

on Gold and Silver Bullion, giving minute and elaborate accounts and descriptions of the various processes and manipulations through which the precious metals have to pass,—from their native state down to their ultimate conversion into *Coin*.

The author has bestowed particular care and attention upon this part of the work,—which he deems of special importance to the large class of people who, though quite aware of the practical use and application of Gold and Silver, as Mediums of Exchange and Standards of value, are yet more or less ignorant of the why and the wherefore of such uses and applications, and of the manner in, and the means by, which the precious metals are fitted to subserve the intended purpose. Proper consideration is also given to the technicalities involved in the Bullion business, which, as a rule, are known only to a few financiers and men on 'Change, whom the special nature of their business obliges to make themselves masters of this particular branch of their line. Practical experience has taught the writer that an intimate acquaintance with these technicalities, and with Bullion operations in general, in all the branches and details of the business, is indispensable to a competent understanding of the working of Exchanges.

After these Chapters, which form, as it were, the ground-work of the book, comes the necessary instruction in the "Monetary Systems of Foreign Countries," illustrated by practical examples of Exchange Operations and Transactions; succeeded by the "Course" of Exchange, and the operations con-

nected generally with "Foreign Exchanges," "Arbitrations of Exchange," &c., &c.

In conclusion of these introductory remarks, the author would observe that he takes the reader, interested in the subject, and willing to follow him in his exposition and treatment of the same, to be a good ordinary arithmetician.

CHAPTER I.

MEDIUM OF EXCHANGE.

THE Employment of a Medium of Exchange is a Social Necessity. There are only two states of Human Society in which no Medium of Exchange is needed; and even of these two States the one has no actual existence, and can only be considered as a mere matter of theoretic assumption; whilst the other is restricted to the lowest and most absolutely uncivilised of the Savage tribes. The untutored Savage readily supplies his few and simple wants from the great store of Nature; his limited requirements leave him independent even of the aid and co-operation of his fellow Savages. So long as he finds food and shelter, and the coarsest covering to shield him from the weather, he is satisfied; and his benefactress—Mother Earth—does not call upon him to return her an equivalent for her gifts. The other imaginary State of Society which might dispense with the need of a Medium of Exchange, is represented by the pretty theory of *Communism*. The amiable Philanthropist may, in his search after a satisfactory solution of the great Social Problem, propound the question,—“Why cannot men live together on a footing of perfect

equality? Why cannot they work for each other in amity and concord, and throw the produce of property and labour into one common stock, from which all may supply their wants with equal rights?" True, if men were all models of paradisiacal purity, and correspondingly elevated intelligence, they might do so; which would, of course, enable them to dispense altogether with a Medium of Exchange; but so angelic a State of Society is, unfortunately, simply Utopian;—a mere creation of dreamland.

We have assumed here the two extremes of the Constitution of Society,—the lowest imaginable State which can possibly exist, and the highest and most perfect, but also the most impossible for mankind to attain. Between these two extremes lie the different degrees of civilisation. Raise the Savage but one step from that lowest state, and he will be found effecting exchanges of simple commodities with his brethren. Another step, and the sphere of his requirements enlarges; he affects certain commodities in preference to others, and sets accordingly a higher value by them, until, at last, some article most highly esteemed by him is made to assume the functions of a Medium of Exchange; or, in other words, of a Standard by which he appraises the value of all other commodities. The Digger Indians of North Pacific America, who, certainly, may pass for the rudest of Savage tribes, were found to traffic in copper tools and natural produce. To this day the skin of the Beaver has a purchasing power in these regions. The higher tribes of Savages, such as the Pawnees and Sioux, in

America, and the Tartars, in Asia, reckon, in their commercial dealings, by horses and some other articles highly valued by them. Cowries (the shells of the *Cypræa Moneta*) are still extensively used as small change in Bengal, the Philippines, and on the Coast of Africa. In Abyssinia, pieces of coarse salt, in size and shape like the sole of a boot, are used as Currency; thirty to forty of them going to the dollar. Amongst semi-barbarous nations, Gold and Silver ornaments are made to subserve the purpose of a purchasing medium; whilst the more civilised people already know the use of Coin made of the Precious Metals; and, finally, the nations most advanced in civilisation have established a complete system of *Mediums of Exchange*, which may be considered the highest and most perfect so far attainable in this scale of progression.

It is in reference to the most civilised state of Society that we call the employment of a Medium of Exchange a Social Necessity.

Civilisation, so far from being an *artificial* state, in the invidious sense so often applied to the term, may really and truly be considered the *natural* state of man, on whom it confers so many material and intellectual blessings. This accounts also for the tendency more or less manifestly shown by savage tribes, when coming into contact with more advanced nations, to share in these blessings, and secure the advantages of social improvement. It is not saying too much, then, that the *highest* state of civilisation is also the *most natural* state of man, and that all the results springing therefrom, good or evil, are simply legitimate, natural,

and inevitable consequences thereof. Among these results figures, also, the existence of an acknowledged Medium of Exchange, which may therefore, without need of further argument, safely be looked upon as one of the constituent elements of Society.

The existence of an acknowledged Medium of Exchange strongly influences the general intercourse between individuals, communities, and nations; whilst the commercial intercourse between them is entirely regulated by it.

The Value of a Commodity is dependent upon the real, or fancied, benefit which its possession confers upon the holder. Upon the means at our command to secure such possession depends then, necessarily, our enjoyment of the benefit thereby conferred. The lack of a proper Medium of Exchange lessens our ability to procure the necessities, comforts, and luxuries of life; whereas the command of it in our hands enables us to satisfy our wants, and obtain the co-operation of our neighbours. A proper Medium of Exchange, therefore, exercises a most powerful influence on all classes of Human Society. It is the life-blood of commerce, that great agency by which the blessings of civilisation are carried and disseminated all over the World; and the due action and scope of this great agency may well be said to be dependent, not only upon the proper quantity, but also upon the healthy movement, or circulation, of such Medium of Exchange.

The functions which a Medium of Exchange is called upon to perform in social and commercial intercourse are twofold; it acts as an agent, and as a

principal. In the former capacity, it serves to effect the valuation of commodities, and to put a price upon them; its division into certain fixed fractional parts supplying us with units by which to calculate and express in figures the value of things. The other function, that of a principal, is still more important; for, in that capacity, it has to serve as an actual guarantee for the correct performance of the valuation of other commodities based upon its own value, as it has itself to pass in exchange for such commodities in accordance with such valuation; which involves the necessity of a fixed intrinsic value of its own.

We will now proceed to discuss and establish the proper nature and form required to constitute a Medium of Exchange. This can be done best by following out, by way of illustration, a series of assumed transactions, such as are constantly occurring in ordinary life.

A stands possessed of certain goods in excess of his own wants, but which are required by B, who, on his part, is again in the same position with another article required by A. Provided the value of both commodities be equal, A and B can easily effect an exchange of them. B, however, may not want A's goods; but may require certain other articles held by C, who may want the goods of A. If the articles are of equal value, the exchange can again be as easily effected,—A taking the goods of B, C those of A, and B those of C. Let us carry the illustration still further, and introduce D, E, F, and all the other letters of the alphabet; and provided always, of course, the value of

the articles be equal, there will be no practical difficulty in the way of effecting the whole series of Exchanges, without the intervention of a general Medium.

But, leaving out of consideration the patent fact that Society, with its thousandfold divisions and ramifications, cannot well be represented by the letters of the alphabet; and the equally patent fact, that the assumption here made, of an equal value of all the articles held by the different parties, is altogether improbable, it is quite clear that even in so limited a community as the letters of the alphabet might suffice to embrace and designate, production and consumption, supply and demand are naturally subject to the ordinary variations; which, of course, must tend to upset the mathematical balance of the system, and to lead to lesser or greater differences in the respective values of the several commodities; and these differences would necessarily require some independent method of equalisation.

The foregoing illustration represents *Barter*, the simplest and most primitive form of Commerce, which, it may as well be mentioned here, remains still a necessity among semi-barbarous nations, and in certain colonies in remote corners of the world.

Let us now carry our alphabetical illustration a step further. A has supplied B with goods, for which B cannot give him anything in return at the time. B stands accordingly *indebted* to A, to whom he promises to give an equivalent at some future period. C, D, E, and the rest of the party, find themselves placed in the same position with reference to A, who happens to

have no immediate need of effecting a further series of Exchanges to supply his own personal wants. The *Accounts* between him and the other parties represent the benefit derived by him in exchange for the goods he has supplied to his debtors. Here we have the positions designated in commercial intercourse as *Accounts* and *Indebtedness*.

Let us proceed another step in advance, and convert these *Accounts* into *Certificates of Indebtedness*, promising to supply and deliver to A a particular commodity. Give A the right of passing these *Certificates* from hand to hand, entitling the holder to claim at his pleasure delivery of the goods thereon designated. Now, although these *Certificates* are of a specific character, yet they will afford A a Medium of Exchange passing current within the limited circle in which he holds the advantageous position of creditor.

Go still one step further, and, instead of specifying on the *Certificates* the particular description of goods which the debtors severally promise to supply, let all the *Certificates* express the value of such goods calculated in fixed corresponding quantities of one general article in which they all deal, and which they are at any time ready and willing to exchange for other commodities. By this means the sphere of usefulness of the Medium of Exchange afforded by such *Certificates of Indebtedness* is considerably enlarged. Still greater usefulness may be imparted to these instruments by expressing the value represented by them measured by some generally accepted Standard.

In the foregoing illustration, which shows the

difference between Barter Trade and Accounts and Indebtedness, we have assumed the Certificates of Indebtedness to be safe and certain to meet with due settlement and conversion into positive value; for otherwise there is at once an end again to the mathematical precision of the system.

Now, the fallacy of such an assumption is too palpable to require comment. It cannot stand for a moment. A much firmer and safer basis is required to secure the proper balancing of the *Exchange of Commodities*.

The claim to an equivalent return which one party derives from the sale and transfer of an article effected by him to another party, must be properly secured by the actual possession of something of intrinsic value, which is held in the same high esteem by all parties, and offers thus all requisite guarantees, independent of all conditions of verbal or written promises; which remains unaffected by external influences, and is of a convenient form and shape to pass readily from hand to hand.

As a matter of fact, we know that the Precious Metals are the substances used for this purpose. The question whether they hold this high position simply by general agreement, or by an inherent right of their own, will be discussed hereafter.

Still, *Barter* and *Indebtedness* continue, to the present day, to play an important part in commercial intercourse, both between individuals and nations; and we must not, therefore, lose sight of them in connection with the subject of this work.

Nations, mutually exchanging their produce, may be said to Barter, in the first instance; if the balance of such Barter turns in favour of the one, the other is placed thereby in a state of *Indebtedness*, which Indebtedness may, through the creation of *Bills of Exchange*, be made to serve for a time as a *Medium of Exchange*; such Bills serving as *Economisers* of actual money. But the final balance of the Account must be settled by a more solid Medium, of the class of which *Gold* is the highest representative.

CHAPTER II.

MEDIUM OF EXCHANGE.

(Continued.)

WHY do we hold Gold so *valuable*, and how comes it that this metal exercises so powerful an influence in the affairs of man? Why should it, of all the substances at our command, be the one pre-eminently chosen to serve in the capacity of a Medium of Exchange as the highest value?

It must be admitted that a direct and positive answer to this question, precluding all need for further discussion, can hardly be given. Most problems in science can be solved upon principles established with mathematical precision; but in regard to this question we are continually driven to fall back upon the abstract meaning of the word *value*, which, together with such vague terms as *common consent* and *general convenience*, constitutes the only element given us wherewith to construct a rationally satisfactory theory to account for the practice which makes Gold our highest standard of value.

We may, however, lay down here three propositions:

1stly. That the use of certain substances of intrinsic

value, and of a convenient form to pass from hand to hand, is necessary for the purpose of facilitating intercourse in civilised society.

2ndly. That there are certain substances of high intrinsic value within our reach, amongst which Gold holds an elevated rank.

3rdly. That Gold, from a mechanical point of view, is the material best suited for the purpose.*

The first proposition we have already endeavoured to demonstrate in the preceding chapter; but we repeat it here once more, as it cannot be pointed out too strongly that our estimate of Gold, and all our remarks about its employment in the capacity of a Medium of Exchange, are meant throughout solely in connection with, and in reference to *civilised society*. This consideration will also enable us to dismiss at once the popular anecdote of Robinson Crusoe, who found a lump of Gold on his island, and made such sorrowful reflections upon the uselessness to him of this discovery.

Intrinsic value, and a convenient form to pass readily from hand to hand, rank among the principal conditions to constitute the suitability of a material to serve as a Medium of Exchange. It is clear that the substances which possess these qualifications in the highest degree must be considered first. The term

* We are entitled to claim this high position for Gold, in so far at least as England is concerned, where the Gold valuation prevails, and Silver and Copper coins are looked upon as occupying a secondary position—a subject to which we shall return hereafter.

intrinsic value means that the worth of the material to which it is applied should be actually inherent in it, independent of any addition to it made by art or labour. Bearing this in mind, we may accordingly at once dismiss from consideration many costly portable objects of art, which owe their value only partly to the material of which they are made, and in a greater or lesser measure to the art and labour bestowed upon their fashion. The same remark applies equally, for obvious reasons, to all the more perishable productions of nature, however rare and costly they may otherwise happen to be.

Among the most valuable substances within the reach of man, Pearls, Diamonds, Precious Stones, and the so-called Noble Metals, may be said to occupy the highest position. We know as a matter of fact that, with due reference to both weight and size, these substances rank among the most costly, and that their intrinsic value is mainly naturally inherent in them, art having but a secondary influence in regard to it. Which of these substances is the most noble and the most durable? Pearls are deservedly considered of very high value, on account of their rarity and beauty, and also the peculiar circumstances under which their formation takes place. They are, however, easily destroyed, and therefore lack one of the most indispensable qualifications to serve for the purpose which we have here in view.

The Diamond* (to which, as the very highest

* We are quite aware, of course, that the Diamond is simply

representative of Precious Stones, we limit our attention here), is, next to the Noble Metals, practically the most indestructible of all the substances on earth.

It is the hardest body in nature; it scratches all other bodies, and is itself scratched by none. Though, from its lamellar structure it is brittle, and will give way in the line of its cleavage, it will stand, unscathed, the test of the strongest force that can be brought to bear upon it through the agency of other bodies of a size not considerably exceeding its own; and, even where it has to yield to the crushing force of some other hard body, of relatively much greater bulk, the fragments into which it is shattered still remain Diamonds. A Diamond can only be cut or abraded by means of another Diamond, and the powder or dust coming off in this process alone will serve to effect the polishing of its faces. It absolutely resists the dissolving or corroding action of the very strongest chemical agents; even a mixture of the concentrated acids fail to produce the slightest effect upon it. As it consists simply of crystallised carbon, it will, of course, burn in fire with free access of air, and more readily still when heated even to ordinary redness in a vessel of oxygen, passing off as carbonic acid gas, without leaving a residue; yet, so long as access of air is ex-

pure carbon in a condensed and crystallized form, and cannot, therefore, properly be ranked among stones. Still, as it is held in commerce the most precious of the gems, we think we are justified in taking it here as the highest representative of the class.

cluded, it will bear a very intense heat without fusing or suffering alteration. One of the most marked and characteristic features of the Diamond is its peculiar splendid lustre, which surpasses the highest brilliancy of all other gems, and contributes much to make it a thing of such marvellous beauty. Add to all this its great rarity, and there is certainly ample to account, in a great measure at least, for the high esteem in which mankind holds the Diamond.

Now let us take Gold as the representative of the Noble Metals. Bulk for bulk, and weight for weight, Gold is certainly much less costly than the Diamond; but, in so far as the virtue of indestructibility is concerned, it may be said to be even superior to the latter, for although it fuses at about 2016 degrees Fahrenheit, the intensest heat attainable fails to otherwise affect it in its nature and properties as Gold; whereas the Diamond, as we have just seen, is absolutely *destroyed* by fire, being converted into a comparatively almost valueless compound, which no art within the sphere of human ken can change back again into a Diamond. All chemical agents, even the strongest mineral acids, employed singly, are powerless against Gold, and it requires the combined action of two of the most powerful acids—nitric and hydrochloric—to force it into a chemical union with another body; but, even in the inferior compound thus formed, the Gold still continues to exist, and may be re-obtained in its virgin purity. The same remark applies to the mechanical mixtures or alloys of Gold with other metals; from the amalgam which Mercury forms with

Gold, the former metal is readily separated again by distillation. In ductibility and malleability Gold surpasses all other metals. Its beautiful colour, and the high polish which it takes, are other qualities adding to its value.

But, although the foregoing considerations might certainly seem to afford ample grounds for the high value we set by these precious materials, and although the fact of their being held in such high esteem by mankind is a matter of daily practical experience, yet, somehow, to many people all this is not sufficiently convincing to preclude constant recurrence to the same plain question, "Why should comparatively small quantities of mere dead matter be esteemed of such high value?" To reply that this estimation is a matter of common consent, based upon general convenience, is really no satisfactory answer to the question, as it altogether fails to convey to the questioner's mind any positive or direct evidence of intrinsic value.

There is nothing left, then, but to rest satisfied with the distinct recognition of the fact that these precious substances owe the exalted rank which they hold among the bodies of nature, independently of all other considerations, to the peculiar material properties inherent in them. They have, in fact, always been held in high esteem from the earliest ages, even long before mankind had begun to enter upon the path of a more advanced civilisation, and when man's knowledge of their nature and properties remained still very imperfect and defective. We, with the teachings of science to aid us in the consideration of the subject, are therefore

all the more bound to assign to these bodies the same exalted position among created matters which they have always held from time immemorial. We may even go so far, at the risk of taking too high ground, to advance our belief that Providence has purposely endowed these bodies with exceptional properties to fit them for the uses to which they are turned by civilised man.

We do not mean by this to assert that Providence has explicitly pointed out Gold, for instance, as the only proper material for *coined money*; but this much is perfectly clear, that a careful comparison of all known bodies in nature leads inevitably to the recognition of the fact that the Precious Metals, and more especially Gold, are the best suited to serve as the common measure of value for all other commodities, and as the medium through which one kind of goods may most readily be exchanged for another. And this fact is indeed practically admitted by man, inasmuch as he uses Gold chiefly in the capacity of *Coin*. But are we quite sure that this is really and truly the most useful application of Gold? Is it impossible but that other applications may be found for it of still higher importance?

Let us assume, for the sake of argument, that Gold is no longer used for Coin, but that some other material performs its present functions in that capacity. What would then be the value of Gold as compared to that of such other material? Would it be higher or lower? That must, of course, depend upon the usefulness of Gold for other purposes; and, with reference

to this, it would be difficult indeed to overlook the patent fact that the fine physical and chemical properties of Gold must necessarily fit it for a variety of uses and applications. Were it no longer used for Coin, then there would naturally be much fuller scope given to turn it perchance to better account in a great many different ways.

We will endeavour to bring this to a plain, practical illustration. Steam boilers are now made of Iron, or Copper, which, as we all know, will only last a few years. Suppose we were to make a steam boiler of Gold, suitably alloyed for the purpose. Being proof against the corroding action of the elements, such a boiler might, within certain limits, and leaving the chance of explosion out of consideration, be practically held fit to last for *ever*. True, there would be the great objection to the loss of interest upon the capital sunk in the manufacture of the article; but, on the mere question of comparative usefulness and durability, there could hardly be a doubt that the decision would be in favour of the Gold. And can it be said that we have actually arrived at the final limit of all invention? The progress of science may at some future period lead to discoveries necessitating the use of even so noble a material as Gold for many important ends, of which we at present have as little notion as our forefathers had of the use of steam as a motive power. It is, indeed, in this very direction that there may before long arise a necessity for a new application of Gold on a large scale. Our age is in active search of a new motive power of much greater force than

steam. Let us suppose a power of the kind to be discovered in some explosive compound, so corrosive in its action upon all other metals, and requiring the employment of so perfect a conductor of heat, that nothing but Gold will serve the purpose of a generator or boiler. It is certainly within the limits of probability that the motive force of this new agent may be so vast, and yet that the employment of Gold in the construction of the machinery may enable us to keep it under such complete control, and make such perfect arrangements, that the great and hitherto apparently Utopian scheme of flying machines would no longer remain impracticable, and a journey from London to New York would then take as many hours as it now takes days. This idea, speculative and even wild as it may appear to be, is yet not entirely novel. What would be the value of Gold then?*

We have here only pointed out at hazard one

* It is only fair that we should quote here an opinion the very reverse of ours. Mr. Hankey, in his 'Principles of Banking,' page 4, says, "Having mentioned Gold, I will merely here say, with reference to that particular commodity, that I know of no other metal which can be accumulated with less general capacity for usefulness than Gold. Gold certainly possesses some merit as an article of merchandise, but if its use for coinage be set aside, I believe that it is the least useful of any metal or mineral production." We are afraid that Mr. Hankey has not gone deeply enough into this question. In reference to Silver, for instance, Science has, within the last twenty years, found a new and important employment for this metal in Photography, which is now consuming a very large and still continually increasing quantity of this material, likely to affect, before long, its value in the market.

representative of Precious Stones, we limit our attention here), is, next to the Noble Metals, practically the most indestructible of all the substances on earth.

It is the hardest body in nature; it scratches all other bodies, and is itself scratched by none. Though, from its lamellar structure it is brittle, and will give way in the line of its cleavage, it will stand, unscathed, the test of the strongest force that can be brought to bear upon it through the agency of other bodies of a size not considerably exceeding its own; and, even where it has to yield to the crushing force of some other hard body, of relatively much greater bulk, the fragments into which it is shattered still remain Diamonds. A Diamond can only be cut or abraded by means of another Diamond, and the powder or dust coming off in this process alone will serve to effect the polishing of its faces. It absolutely resists the dissolving or corroding action of the very strongest chemical agents; even a mixture of the concentrated acids fail to produce the slightest effect upon it. As it consists simply of crystallised carbon, it will, of course, burn in fire with free access of air, and more readily still when heated even to ordinary redness in a vessel of oxygen, passing off as carbonic acid gas, without leaving a residue; yet, so long as access of air is ex-

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is scarcely inferior to the Diamond in hardness, is still more refractory than Platinum, and much less weldable, and there are, moreover, probably no more than a few hundred ounces of it in existence.

Now, it must appear quite clear that the material intended to be used for monetary purposes should possess the requisite conditions as perfectly as is attainable in nature ; and when, therefore, a material is deficient in one or other of these conditions, it is thereby necessarily disqualified for employment as Coin.

These remarks, if they do not exactly demonstrate with mathematical precision that Gold and Silver are the right and proper materials for Coinage, must at all events be held to afford powerful arguments in support of this conclusion, which the undoubted fact of their holding this position can, of course, only tend to confirm and strengthen. Gold appears to possess these necessary qualifications in the highest degree ; Silver follows next in order.

CHAPTER III.

CURRENCY.

GOLD is then the most perfect of the Mediums of Exchange in actual use in the civilised world, and its superiority in this respect is so absolute that all other practical substitutes are governed by it, no matter whether they be of *intrinsic* or of *conditional* value.

The general Mediums of Exchange in use among civilised nations may now be given as consisting of—

Gold coins . . .	} The Currency.
Silver coins . . .	
Copper coins . . .	
Bank notes, or . .	
State notes . . .	
Bills of Exchange.	

Gold, Silver, and Copper coins, and Bank notes, pass *current* from hand to hand without restrictions; they are therefore called *Currency*.

Bills of Exchange are not *Currency*; their transmission does not take place in the same free and simple manner; but they also serve, under certain restrictions, as a Medium of Exchange.

The Mediums of Exchange comprised here under

the general term Currency may be subdivided again into

Gold coins }	Metallic Currency
Silver coins }	
Copper coins }	
Bank notes and	Paper Currency.
State notes }	

and, upon the ground that in England Gold forms the basis of valuation, into—

Gold coins	Free Currency.
Silver coins* }	Conditional Currency.
Copper coins }	
Bank notes, and	
State notes }	

METALLIC CURRENCY.—There is reason to believe that Gold, Silver, and Copper have generally stood in pretty much the same relation to each other with regard to their proportionate value as they do now. In so far as Gold and Silver are concerned, at least, the fluctuations of the proportionate value of these two metals may be assumed to lie within the narrow limits of a few per cent. But the case is somewhat different with Copper. This metal, though not belonging to the class called *noble*, holds yet a certain rank among the *inferior* metals, on account of its many valuable qualities, and its general usefulness. In some countries, and in some ages, it has been more extensively used than it is now in Europe. In the East and in China

* In certain countries *Silver* is free currency, and *Gold* conditional currency, as will be shown hereafter.

Copper, Brass, and even Iron coins, still form an important part of the Currency. In Europe, however, we now look upon Copper Coins simply as tokens, as is clearly proved by the fact, for instance, that a few years ago the whole of the old French, and soon after all the old English Copper Currency, were called in, and new coinages of the same denominations, but of little more than half the weight or size of the former pieces, were issued. The intrinsic value of these tokens falls accordingly very short of their denominational value. In England Silver coins are also tokens, but their intrinsic metallic value is comparatively much higher than that of Copper tokens, although it falls still below the actual market price of Silver.

But it may be asked, if these Silver or Copper tokens do not possess their full denominational metallic value, yet pass as money, would not this rather seem to militate against the assumed absolute supremacy of Gold? Here we have the justification of our division of the Currency into *Free Currency* and *Conditional Currency*. In England a law exists, called the law of legal tender, in accordance with which *Gold coin is legal tender for any amount*; whilst Silver coin is legal tender *up to forty shillings*, and Copper up to *one shilling only*. So a creditor, whilst bound to take all the Gold tendered him in discharge of his claim, can refuse to receive payment in Silver if the sum tendered in that coinage exceeds two pounds, and in Copper if it is more than twelve pence; and he can accordingly compel payment in Gold of any sum exceeding two

pounds sterling. He may also be paid in Bank of England notes, which he is equally bound to take. But as the Bank itself has the right of refusing to receive payment in its own notes, this description of Currency too belongs to the *conditional*. It will at once be seen that this law of legal tender is an effectual bar to any attempt to displace the supremacy of Gold in England, and to use instead the conditional currencies of Silver and Copper.

The values represented in Paper Currency and Bills of Exchange, are expressed in the denominations of the metallic Currency; and all other securities and values—State bonds, shares, lands, houses, and every other description of property and service—are also measured and expressed among civilised nations in the denominations of the metallic coins of the country.

It is one of the special objects of this book to give as much information as possible upon everything connected with metallic Coinage, as will be seen hereafter in the chapters on Bullion, Gold, Silver, Mining, Melting, Assaying, Coining, &c. But in this present chapter we will, in the first place, discuss the description of Currency known as *Paper Money*, as a proper understanding on this subject is a matter of some importance in dealing with the *Exchanges* with certain foreign countries.

PAPER CURRENCY.—This description of current money, in contradistinction to which metallic money is appropriately called **HARD CASH**, plays a highly important part in most of the systems of Currency.

We hear of Bank Notes *as good as Gold*, of Paper Money *depreciated* in value, and of Notes that have become *valueless*. We know—as a matter of history—that one of the causes leading to the demoralisation of French society in the last century was fairly imputable to the profuse issue of John Law's notorious Mississippi and other similar Bonds—followed, at a later period, by a veritable deluge of *Assignats*.

Modern history affords us the instance of the *Confederate Notes*, which are now absolutely valueless, whilst the Italian, Russian, and United States Paper Money is *depreciated*. But we know, on the other hand, that *Bank of England Notes*, as well as the present French and many other Foreign Notes, are looked upon as of the same value as Coin, and that they are quite *safe*. Occasionally we also hear of suggestions for an *extension* of the Paper Currency, or of some other scheme for the creation of a larger amount of Paper Money. Indeed, whenever *Money is scarce*, it is one of the most common things to hear the question asked, “Why does not the Government issue Paper Money, or give lawful authority to bankers and others to issue Notes marked with a Government stamp, as evidence of their safety?” &c. This suggestion has the barren merit of proposing the *issue* of Notes invested with the *Government stamp* as a kind of presumptive evidence of their goodness; but it fails in this most important particular, that it makes no provision for the ultimate conversion of the Notes into *actual value*; and without that provision the mere legislation of the issue by the *stamp* cannot have the least practical effect.

A brief investigation of the principle upon which Paper Money may properly be issued will therefore be useful.

There are two descriptions of Paper Issue—viz., BANK NOTES, or Notes issued by banks, under the authority and with some participation or guarantee of the Government; and STATE NOTES, issued by the Treasuries of the State (these also are frequently issued through the agency of banks). Both Bank Notes and State Notes may be regarded on the same footing in their offices and functions as part of the *Currency*. Now each such Note carries on its face the *promise to pay* to the holder, or bearer, on demand, or upon presentation, a certain amount of Metallic Money. Upon the faith of this promise the Note becomes current, and is assumed to stand in the place of Hard Cash. The simple plain promise to the bearer that, in exchange for the piece of paper he holds, he may at any time, at the place designated, receive Gold or Silver (as the case may be), admits of no qualification. Introduce a qualification on the face of the Note, promising payment otherwise than on demand, or in any other value than in Metallic Money, and the worth of the Note falls at once. We have, therefore, to deal with the plain and dry fact of this promise; and the holders of Notes must have the absolute right, individually and collectively, of *demanding Hard Cash for their Notes* whenever they choose. Now here the question arises,—Is this promise to pay in Coin safe to be fulfilled under all and any circumstances? The respective

degrees of the certainty that this promise will be kept may be illustrated by the following classification of Paper Currency into four descriptions :—

1st. Bank Notes made *absolutely safe*, by being issued only against an equivalent amount of Bullion held by the issuer.

2nd. Bank Notes made *good* for all practical purposes, by being issued partly against Bullion held by the issuer, and partly against Government and other valuable securities.

3rd. Bank or State Notes *depreciated* in value, issued against a small reserve of Bullion, but resting on the Credit of the country generally, and on the Strength and good Faith of the Government.

4th. State Notes issued almost entirely or altogether without a Bullion reserve, and under the bare Guarantee of a weak or tottering Government, which are already *valueless*, or threaten to become so.

The **FIRST CLASS** of Notes assumed here is only imaginary ; for there are no Bank Notes issued upon that system. If there were, the security offered by them would seem absolute in theory as well as in practice. A Bank, for instance, might hold ten millions in Gold, and issue ten millions of Notes against them. The Gold being specially assigned to serve as security for these Notes, and resting dormant in the vaults of the Bank, to be paid away only against the production of the pieces of paper by which it is represented, there would be a complete balance between the two. If all

the Notes were presented at once, payment could be made at once, and no question of liability would remain on either side. So perfect and safe a system of convertibility has frequently been suggested in England, and there is much to be said in its favour.* In the first place, on the Bullion deposit there would be the saving of the expenses of Coinage, and on the Coin lying inactive in the coffers of the Bank there would be the saving of the usual loss by abrasion or friction; and, in the second place, Bank Notes constitute a far more convenient and portable kind of Currency, especially for heavy sums, than Coin; and for all other practical purposes such Notes would seem to be as good as Gold.

But even to this apparently so safe basis of convertibility at least a few theoretical objections worth mentioning may be started. Although Bank Notes are certainly more portable and more convenient, more especially for large payments, yet they are, on the other hand, also more liable to destruction than Metallic Money. They may also be more or less successfully imitated by forgery,—a risk which, much as it is lessened now-a-days by superior manufacture and engraving, has still to be taken into account. We must not lose sight either altogether of the expenses

* We may here remark that in Hamburg the Bank holds a stock of Silver Bullion on something like the principle here suggested; however, it *issues no Notes* against the same, but in lieu thereof it keeps accounts with Merchants, and transfers the respective ownership in this stock of Bullion from one to the other. (See Hamburg and Mark Banco.)

entailed by the manufacture and issue of Bank Notes, which would hardly be balanced altogether by the saving of the expenses of Coinage on the other hand ; for a certain amount of Coined Money would still be required under any circumstances. Then there are certain other contingencies which must be taken into account in comparing the respective worth of a Gold currency and a Note Currency. A war or a revolution might break out ; an enemy might invade the country, and might possess himself of the treasure in the Bank, and carry it away. What would then become of the *certainty of the convertibility of the Note* ? In England we may now laugh at the very suggestion of such a contingency ; but however remote the risk, there is no blinking the fact that it still really *does* exist, by however small a fraction it may be theoretically expressed. In other countries, less secure than England, the risk will be more appreciable. It is partly for this reason that threatened wars and revolutions exercise so great an influence on Paper Currency. As the danger draws near the Note holder becomes alarmed, and presents his Notes for payment, preferring to have his Gold in his own possession rather than entrust it to any other custody ; and in spite of all principles of political and social economy propounded and expounded to him, he prefers to *hoard* it. The desire for the actual substance, for the material of *intrinsic* value itself, as affording the *only absolute* guarantee in the end, is too strong ; which again shows the superiority of Gold over *all other Mediums of Exchange*. We refer to this natural tendency of the Note holder

here, in connection with our assumed first-class Bank Note system, as a mere theoretical objection of perhaps no great weight under ordinary circumstances ; but it becomes intensely practical under actually existing conditions of lesser certainty.

The **SECOND CLASS** OF BANK NOTES in our scale of gradation, which we have designated as *good*, is represented by the Paper Currencies of the more prosperous states, such as England, France, Germany, Holland, and Belgium. It rests upon the basis of a combination of Precious Metals and other Securities, upon the joint value of which the issue is made.

The Bank of England, for instance, under the Act called Sir Robert Peel's Act, has the privilege of issuing Bank Notes against the amount of Bullion in its vaults, and also against an additional amount of fifteen millions sterling, which the British Government owes to the Bank.* Thus if the Bank of England has (say) twenty millions in Bullion in its cellars, it may issue against this Bullion, and against the fifteen millions Government liability, thirty-five millions in Notes. The Bank Note promises payment in Gold ; the Bank has thus issued thirty-five millions in Notes for which only twenty millions in Gold are in its hands, or about fifty-seven per cent. If the stock of Bullion should increase to thirty millions, and forty-five millions in Notes be thereupon issued, the proportion of the

* In this sum of fifteen millions certain other securities held by the Bank are included.

Notes actually covered by Gold would be about sixty-six per cent. ; but with a decline of the stock of Bullion to ten millions, the proportion would be only forty per cent. in an issue of twenty-five millions in Notes ; and it would fall to twenty-five per cent. if the stock of Bullion were reduced to five millions, and an issue of twenty millions were made in Notes. In the face of this, the promise to pay all Notes in Gold would seem somewhat paradoxical, and slightly illusory ; and, indeed, the uncompromising opponents of Sir Robert Peel's Act do not scruple to assert that the Bank of England is generally in a state of insolvency. If the term insolvency as used by them be meant to express the Bank's inability to pay all its Notes in Gold at once, they may, strictly speaking, not be altogether wrong in this extreme assertion of their views ; but there are other considerations in the case which effectually counterbalance this allegation. In the first place, the Government has guaranteed the fifteen millions over-issue which is not actually covered by Gold. What is the value of that guarantee ? So long as the English Government remains as firm as it is now, it could easily, by loan or otherwise, raise that amount in Gold, and pay the Bank therewith, thus actually covering this over-issue of Notes by Gold ; or it could issue Stock bearing interest, and sell the same, taking in payment Bank of England Notes, and so withdraw them from circulation. Even in times of internal commotion and foreign complications, the British Government could raise money on its credit ; and in case of urgent need, as the supreme authority of the

nation itself, it might even raise money by extra taxation payable in Gold. The question then would be,—“Is there—leaving the stock of Bullion at the Bank out of consideration—sufficient Gold in the country, or can the industry of the people draw enough from abroad, to produce fifteen millions at the bidding of the authorities?” The people must under the circumstances of course be willing to support the Government; should they, by revolution or otherwise, oppose or resist the call made upon them, or should the country turn out to be too poor in Gold to pay the demand, the forced taxation fails of necessity. In England we fortunately have an acknowledged good Government, in splendid credit, and the wealth and industrial power of the nation are undoubted. This shows how important a bearing the stability of a Government, and the prosperity of a people, have upon the question.

There are other safeguards besides the guarantee of the British Government. The Bank of England has a capital of fourteen millions sterling, the securities for which may be realised and converted into Gold; so that, with the aid afforded to the institution by the law of legal tender (which compels every body, except the Bank itself, to receive Bank Notes in payment), it may be looked upon as pretty well secured. And the supposition that the Notes should be presented all at once, without giving the Bank time to realise, is an extreme one, which may fairly be dismissed from consideration here.

We in England have good reason to attach perfect

faith to the convertibility of our Bank of England Notes, and the common saying—that they are as good as Gold—is practically quite correct.

The principle of making the amount of the Notes to be issued by the Bank of England partially dependent upon the amount of Bullion in its vaults is highly commendable, although, as the additional fifteen millions against Government securities are fixed issue, the relative per centage of actual metallic means of payment, dependent as it is, in a measure, upon the exports and imports of Treasure, will occasionally lead to a disturbance of the proper balance. But we may look upon the actual presence of Gold in the Bank as dependent, not only upon the profits of industry and commerce, but also, to some extent, upon the prudence or imprudence of English investments in enterprises at home and abroad. Accordingly, when the amount of Currency becomes contracted, a natural check is exercised upon overtrading and speculation.* We may then, upon the whole, be satisfied with the system as it is now—at all events until a better one

* During the height of a *commercial* crisis the Bullion of the Bank generally falls very low, which naturally leads to a panic in the Money Market, attended with great commercial distress. From their suddenness and severity (and very sudden and severe it must be admitted they are), these events cannot but exercise a most adverse influence upon the general prosperity of the people. This subject would involve a long discussion on the Bank Act, for which, however, we have no space to spare here. We also think it unnecessary to say anything in this place respecting the issue of Bank Notes by other English, Scotch and Irish Banks, as limited by law.

be substituted ; for, if we may be permitted to borrow the term used by its enthusiastic advocates and admirers, it is *eminently sound*.

On looking again, from another point of view, at the position of the Bank of England, which, with a stock of only twenty millions of Bullion in reserve, and fifteen millions of Government Securities, is empowered to issue thirty-five millions of Money in Notes, the question naturally presents itself:—"If we can create fifteen millions of extra money on such easy terms, why not make the sum twenty millions, or thirty, or fifty? Government surely is good enough for the larger as it is for the smaller issue!" We do not pretend here to appraise and fix the amount for which the Government of Great Britain may be held to be actually good—in the commercial sense of the word; but we very much question whether the English Government itself could, in times of great pressure, attended with scarcity of Gold, force from its own constituents—the people—an amount of fifty millions sterling in Gold, which yet would be absolutely required to enable it to perform its own part of the engagement, to take up and pay in hard cash the fifty millions issued in Notes. We cannot say whether it would, under such circumstances, succeed in squeezing even thirty millions out of the people; all we know for certain is, that at present it undertakes to pay the fifteen millions over-issue if called upon to do so.

In limiting its liability to this amount, the Government may certainly be considered to act upon a proper and prudent principle; for it may pretty safely be

taken for granted that, besides the Bullion reserve in the Bank, there is always sufficient Gold Currency in circulation to produce, at an extreme pinch, by the power and the credit of the Government, the fifteen millions wanted to pay off in Coin all the Notes of the fifteen millions over issue.

This limit of the over-issue to fifteen millions may simply be accidental, or it may be the result of a careful consideration and calculation; but there can be no doubt that upon the whole it works well.* Whenever a crisis occurs, and both Gold and Notes are scarce, we hear the cry for *more Money* raised, and Government is urged to sanction a larger issue of Notes to supply the eager demand. Every argument is pressed into the service to prove that the *requirements of the age* and the *expansion of trade* impe-

* The most conservative of our Financiers regard even these fifteen millions of Government Notes in the light of a mischievous surplus of currency, and impute to this over-issue of Notes the periodical panics which visit us in times of mercantile distress. They contend that if we had a Currency founded on Bullion alone, the exportation of Gold or Silver would not involve the risk, at all events, of disturbing the proper balance of our Currency System; whilst, under the present arrangement, the exportation of Bullion in hard times cannot but tend to raise apprehensions in the public mind lest the Bank should not be able to pay its own Notes, and thus to create a panic, in great aggravation of the general distress; which panic, with its disastrous results, cannot justly be imputed, under such circumstances, to overtrading and imprudent speculation. These Financiers see something arbitrary and unmeaning in the present privilege of the Bank of England, and advocate the *falling back* upon our "first class" plan—viz. issue of Notes based solely upon Gold.

ratively call for an increase of Currency. It was so in 1866. Last year, in 1867, not a word was heard about this necessity of an increase of Currency, for the Bank was not only overstocked with Bullion then, but its Notes in reserve were nearly equal in amount to the fifteen millions guaranteed by Government, which certainly shows that the *requirements of the age* and the *expansion of trade* should not be judged by the contingencies of a single year.

Proposals have also been made for a double Paper Currency to be issued by the Bank—viz., Bank Notes based exclusively upon the stock of Bullion (our own first class plan here), and Bank Notes based expressly upon the guarantee of Government. It is argued that, supposing this latter description of Paper Money to suffer depreciation from distrust, it might still continue to serve as a Currency, even though it should be at a discount of fifty per cent. The proposers of this scheme clearly overlook the disturbing action which the introduction of such a system would be sure to exercise upon the healthy operations of trade, as well as the important fact that no provision is made in their project for the ultimate conversion of their guarantee Notes into actual value. We, for our part, believe in the wisdom of the present system of the Bank of England, which rests the basis of its issue upon the combination of the Bullion of the country, the substantial mark and token of its prosperity, with the credit of the Government; restricting the latter factor, however, within prudent limitations. We are of opinion also, that though there might be room for rational improvement in the present

system, experiments in matters of this nature are too hazardous to be lightly attempted unless called for by absolute necessity. We hope, then, that the English Government will listen to no plan tending to extend the Paper Currency of the country at the expense of lessening the proportion of Bullion which now serves as a fair basis.*

The system of the Bank of France may be said to be even more secure than that of the Bank of England, as the issue of Bank of France Notes has a comparatively much larger foundation of Bullion, the French Government owing only four millions to the Bank, instead of fifteen millions as is the case in England. The other good Continental Bank Notes which pass upon a par with the Metallic Currency, are also based on systems connected with Banks and State Treasuries, and sufficiently solid to invest the Notes with that character of safety which alone can enable them to perform all the offices and functions of full-valued money.

* The only really useful improvement which may be suggested in reference to the Bank of England Notes is the issue of a £1 Paper Currency. Formerly the Bank issued £1 Notes, but now the smallest amount is £5. It may fairly be taken for granted that the issue of £1 Notes would have the beneficial result of bringing a good deal of the present Gold coin back into the coffers of the Bank, preventing thus the wear of the coin. It might also be more convenient to the public. In other countries, quite or nearly as "sound" as England, Notes are issued for amounts much less than £1. Our Bank authorities, no doubt, act upon what they consider a prudent policy; but it is not clear whether an alteration of the system in this respect might not serve to bring out convincingly the advantages of £1 Notes.

The following Bank of England statements show the condition of the Bank at two different periods:—

BANK OF ENGLAND, 18th November 1857.

Issue Department.

LIABILITIES. £		ASSETS. £	
Notes Issued	... 22,554,595	Government Debt	11,015,100
		Other Securities ...	5,459,900
		Bullion ...	6,079,595
			<u>£22,554,595</u>

Banking Department.

£		£	
Proprietors' Capital	14,553,000	Government Securities	6,407,134
Rest ...	3,433,500	Other ditto ...	} 30,299,270
Public Deposits ...	5,483,881	Bills Discounted ...	
Other ditto ...	13,959,165	Notes ...	1,148,185
Seven Day's Bills, &c.	829,544	Gold and Silver Coin	404,501
	<u>£38,259,090</u>		<u>£38,259,090</u>

Thus, against $22\frac{1}{2}$ millions in Notes, issued by the Issue Department, there were at that time (the great panic of 1857) only 6 millions of Bullion in hand to pay the Notes with, or about 27 per cent. There was the sum of £1,148,185 in Notes in the Banking Department *in Reserve*, lessening to that extent the amount in circulation; but these were held as against liabilities.

The position of the Bank of England Notes' Issue was then very weak, and the Government had to come

to the rescue by suspending the Bank Act, and authorising an extra issue of £2,000,000 in Notes.

BANK OF ENGLAND, 20th November 1867.

Issue Department.

LIABILITIES.	£	ASSETS.	£
Notes Issued ...	36,087,615	Government Debt	11,015,100
		Other Securities ...	3,984,900
		(Total £15 millions.)	
		Bullion ...	21,087,615
			<u>36,087,615</u>

Banking Department.

	£		£
Proprietors' Capital	14,553,000	Government Securities ...	12,319,203
Rest ...	3,070,618	Other ditto ...	} 16,680,990
Public Deposits ...	5,053,907	Bills Discounted ...	
Other ditto ...	19,053,683	Notes ...	12,187,700
Seven Days' Bills, &c.	605,298	Gold and Silver Coin	1,148,613
	<u>£42,336,506</u>		<u>£42,336,506</u>

Against 36 millions in Notes issued by the Issue Department, the Bank held at the time 21 millions in Bullion, or about 59 per cent. But, in the Banking Department, there were in Reserve (lying there idle), £12,187,700 in Notes, and £1,148,613 in Coin, together £13,336,313, not in circulation, which, deducted from the £36,087,615 Notes, leaves only £22,751,302 in actual circulation against 21 millions Bullion, or about 94 per cent. The position of the Bank was consequently very strong at the time.

The position of the Bank of England is thus always placed openly before the Public in the Weekly Statement of the two Departments, the Issue and the Banking. In estimating the position of the Bank from these Statements, the Items of Notes and Coin in Reserve must be taken into account.

The following statements of the Bank of France at the same periods, will furnish a comparison. The Bank of France has no separate Issue Department like the Bank of England.

BANK OF FRANCE, for Week ending 12th November 1857.

LIABILITIES. £		ASSETS. £	
Notes Issued ...	23,250,392	Bullion 	7,581,796
Post Bills, &c. ...	406,337	Bills Discounted ...	} 26,945,764
Deposits 	9,001,426	Advances on Bullion ...	
Treasury Balance ...	2,895,078	&c. 	} 2,499,935
Reserve 	1,044,230	Advances on Public ...	
Profit and Loss ...	797,356	Funds, Shares and ...	
Capital 	7,300,000	Debentures ...	} 2,685,936
		Government Debt ...	
		Government Stock ...	2,606,804
		New Bank Stock, ...	} 2,685,936
		not yet settled ...	
		Premises 	374,584
	<u>£44,694,819</u>		<u>£44,694,819</u>

The amount of Bullion in the vaults of the Bank at this time was thus about 33 per cent. of the Issue of Notes. This was during the commercial panic in England, which necessarily affected the French Bank. It is, however, worth remembering that beyond this adverse influence there was no crisis in France at that time.

BANK OF FRANCE, for Week ending 27th December 1867.

LIABILITIES. £		ASSETS. £	
Notes Issued	... 44,902,229	Bullion	... 40,609,572
Post Bills, &c.	... 1,343,988	Bills Discounted	... 19,863,756
Deposits	... 17,070,315	Advances on Bullion	} 3,700,961
Treasury Balance...	1,330,235	&c.	
Reserve	... 1,044,230	Advances on Funds,	} 3,503,500
Profit and Loss	... 694,830	Shares and Deben-	
Capital	... 7,581,791	tures	... 331,050
		Government Debt	4,000,000
		Government Stock	1,958,779
		Premises	... 331,050
	<u>£73,967,618</u>		<u>£73,967,618</u>

The proportion of the Bullion to the Note Issue was then above 90 per cent. The Government debt is only £4,000,000. The position of the Bank of France was, according to this statement, much stronger at the time than that of the Bank of England.

We now come to the **THIRD CLASS** of Paper Money, known as *Depreciated Currency*. The countries where Paper Issues are at the present time depreciated are, in Europe, notably Austria, Russia, Spain and Italy; in the Western World, some of the smaller Republics, and the great Republic of the United States. In these countries Gold is worth more than Paper Currency; in the United States, for instance, Gold was quoted in November last at 139, which means that 100 dollars in *Gold* are worth 139 dollars in *Paper* Currency, or thirty-nine per cent. more. In Austria the premium on Gold varies from twenty to fifty per cent.

(towards the close of last year it stood at about thirty per cent.) ; in Russia it varies from ten to twenty per cent. ; in Italy about the same. The fluctuations in the value of Gold in these countries are closely connected with the varying phases of their commercial prosperity, and with the internal and external changes in the political horizon, upon which commerce and wealth, as well as the stability of Governments, ultimately depend. The over-issue of Paper Currency is either caused by the inferior industrious and mercantile condition of the country (frequently aggravated by unwise acts of the Government in reference to the trade of the world), or mainly, and generally in the first instance, by the actual necessities of the Government. Requiring very large sums of Money for War or other purposes, and finding that the country cannot, even by forced taxation, be made to yield sufficient Coin, for the very simple reason that there happens to be in circulation only a fraction of the large amount so suddenly wanted,—and having besides exhausted its borrowing powers in the Money Market of other countries, the Government is forced to have recourse to the issue of Paper Money, either direct from the State Treasuries, or through the Medium and Agency of Banks. State Notes of this kind carry upon their face the usual dry promise to pay the amount stated in cash to the bearer or holder on presentation or demand. So long as the credit of the Government remains pretty good, and prudent arrangements have been made respecting Bullion reserves, to secure the conversion of the Notes into Coin under certain circumstances,

the system is elastic enough to permit of a comparatively wider range than is required for good Notes of our second class. So soon, however, as the issue breaks these elastic bonds, and the public become aware that it is impossible for the issuer to pay at the time, and that the fulfilment of the promise to pay has to be waited for till some *future period*, the contingency even of the deferred payment being dependent upon the future prosperity of the nation, and the stability of the political organisation, confidence in the safety of the Notes is at once destroyed. With an increasing issue of Notes the Treasuries and Banks furnish actual proof of their inability to cash them; the Government forbids the export of Gold, and declares its Notes legal tender; creating thus a so-called *forced Paper Currency*. The Bullion basis is set aside, and Gold is turned into simple merchandise, in spite of the well-recognised fact that it is the true standard of value.

The degree of faith still reposed in the Government by the people, and inspired by the hopes of a future revival or improvement of Industry and Commerce, is expressed in the marketable sense, by the percentage rate of depreciation of the Paper Currency, and the *premium* which Hard Cash, or Bullion in all shapes, brings in the market.

Operations of *over-issue* of this kind by State Governments, or Communities generally, closely resemble the borrowing of money by individuals upon promise to repay the loan at some future time. The charges of Interest—sometimes in both cases of a *usurious* character—are in the case of State operations

of this kind represented by the greater or lesser *depreciation* of the Paper Money, and the effect which such depreciation has upon the home and foreign trade of the country. An over-issue of Paper Money in a country may apparently create a momentary *flushness*; indeed, in the United States, for instance, during the late civil war, the flood of Greenbacks pouring into the Market stimulated the home trade, and afforded an easy means of amassing wealth to those who knew how to profit by the circumstances of the times. In the end, however, a people will find the obligation of repaying Capital and Interest just as onerous and difficult of fulfilment as an individual may find it; and if the hopes of the future, resting on an improved state of Trade and Politics, are disappointed, National Bankruptcy becomes imminent.

An over-issue of Paper Currency, no matter whether brought about by political and financial mismanagement, or forced upon the Government of a State by absolute necessity, is therefore not only detrimental to the present interests of a country, in so far as its Exchanges with other States are concerned, but it involves, like a continual *discount and renewal*, a heavy charge on the future prosperity and resources of the State. In Italy the forced Currency is only a few years old, but it is continually on the increase. In Spain the state of things is so uncertain that the relative value between Paper Money and Metallic Money can no longer be fixed with any degree of accuracy. As regards the Rouble Notes in circulation in the Russian Empire, it is stated that the Imperial Government itself is not aware

of the actual totals issued, and has thus lost control over its liabilities in reference to the same; moreover, a large quantity of successfully forged Notes is in circulation, which the authorities hesitate to suppress, fearing a further disturbance of credit. If this be true, we may soon hear of something more serious than a mere further depreciation of Russian Paper Money.

Austria offers one of the most remarkable instances of the position of an *over-issuing* State. For many years Bankruptcy has hung over her like the sword of Damocles; yet she still stands erect. Gold and Silver Coins have almost entirely disappeared from the land, and Paper Money reigns paramount, in Notes from thousands of florins, down to the value of a few pence. Indeed, the Austrians seem almost to have solved the problem of dispensing altogether with a Metallic Currency. Their intercourse with other nations is limited, and their Industry is shut out from the markets of the world. Yet they do not seem to be poor; they have a full measure of all the luxuries and refinements which other nations enjoy. The Austrian system of Paper Money seems to drag on its existence on the faint hope that, at some future time or other, a successful movement may be accomplished to regain a sufficient stock of Bullion. A day of reckoning, however, must come, sooner or later, for Austria as well as for other States that are equally in a condition of almost hopeless financial confusion and embarrassment. It needs only—and with the ever-increasing liabilities which certain States load upon themselves in our times such an event is not unlikely—that one of these

States should become Bankrupt, when the whirlwind of the panic created thereby would be sure to blow down all the rest. Then we may expect to see revolution, civil war, and anarchy taking the place of the peaceful interchange of benefits upon which civilised society is founded.

The means of averting such a catastrophe are, first and foremost, the strictest economy on the part of the Government. Every effort should be made to reduce the Expenditure of the State within the narrowest possible limits, and to secure an excess of the Revenue over it, applying the balance to the gradual withdrawal of the fictitious Currency from circulation. In the second place, Government and People should heartily unite in fostering those Industries, more especially, of which the products can be beneficially exported, thus attracting Bullion into the State. In this manner, Government, Industry, and Commerce would all regain strength and credit, sufficiently to enable the State ultimately to command the necessary confidence, either for the Consolidation of its Liabilities into a properly-regulated State Debt, or for the re-establishment of a proper *par* between Paper and Metallic Money. Let us hope that the Austrians will be able to accomplish this much desirable end. At least they have an example before them in—England.

During the wars of Napoleon, this country was called upon suddenly to raise enormous Sums of Money; and so severe was the strain at the time, that for twenty years Specie payments were suspended, and Gold stood at a premium of forty per cent. In the

years of peace which followed, Retrenchment of Expenditure—but, above all, the indomitable Industry of the Nation, which commanded the markets of the world; the insatiable thirst for enterprise which, aided by this Industry, and strengthened by the influence gained in the victorious struggles, drew Bullion to the country—enabled the Statesmen of England to convert the Floating Liabilities into a National Debt, and a Bullion basis was regained sooner than even sanguine people had expected. It is true, that this National Debt—on which we of the present generation, who have inherited this burthen from our forefathers, still continue to the present day to pay the Discount or Interest, and even are not altogether without some hope of being yet able some time to pay back the Principal—is a heavy charge; but the fearful evils of National Bankruptcy, with its attendant demoralisation, were avoided. If this proved a hard and difficult task for England, with all her extensive means, her great industry, and her vast power, leaving her still to the present day bearing the heavy burden thereby entailed upon her, how much more difficult may such a recovery be expected to prove to other States of so much less power and wealth and ability to cope with the overwhelming difficulties of their position!

The United States, whose present Floating Debt is enormous, are likely to follow in the footsteps of England. Their Paper Currency has already recovered to a very considerable extent, the premium on Gold, which at one time ranged from 100 to 200 per cent., being down now to about 40 per cent. The American

Government acts wisely in forcing Gold, by timely arrangements, to pass through its Treasury. Meanwhile the American National Debt undergoes, moreover, a continued reduction, and we have no doubt but that—slowly and gradually, but surely—the Notes will rise in value until they stand on a par with Gold. This may take five, ten, or twenty years; but the ultimate accomplishment of the end is almost certain, as the Country is possessed of immense natural wealth and numerous other advantages, and the People have all the requisite characteristics of Industry and Intelligence conducive to such a result.

The American Greenback Currency forms a part of the United States Debt incurred during the late Civil War. On the 1st November, 1867, this stood as follows :—

	Dollars.
Bonds—Interest payable in Gold...	1,778,110,991
" " " in Paper	426,668,640
" to be paid off 	18,237,538
Gold Certificates	14,514,200
Greenbacks and Small Notes ...	387,971,277
	Dols. 2,625,502,646

Against this issue of Dols. 387,971,277 in Government Notes, the United States Treasury held at that date

	Dollars
In Gold	111,543,177
In Notes	22,543,203

So that, deducting the Gold Certificates as above, the Treasury held only Dols. **97,028,977**, or about 25 per

cent., in Gold. But this is not all. The Gold is not professedly held as pledged to guarantee the Greenbacks; it is used by the Government for general financial operations in the Reduction of the Debt, the semi-annual payments of Interest on the Gold-bearing Bonds and other payments, so that practically the Notes have no Bullion reserve of their own. The Gold, however, is not dormant, but flows rapidly in and out of the Treasury; the actually existing balance, therefore, in principle at least, represents a reserve.

In Austria there are two principal descriptions of Bank Notes, the one issued by the National Bank, against which that Institution is supposed to hold one-third in Bullion, as per statement of the National Bank, 30th November, 1867 :—

LIABILITIES.		ASSETS.	
	Florins.		Florins.
Capital	110,250,000	Bullion and Coin	105,627,301
Reserve	14,069,029	Bills discounted } payable in Coin }	43,210,540
Notes circulating	249,666,830	Bills discounted...	76,418,776
Post Bills, &c. ...	1,441,456	Advances ...	25,143,200
Mortgage Letters } circulating ... }	59,443,660	State Notes ...	3,061,848
Sundries	1,590,927	Government Debt against commission }	80,000,000
		Mortgage Loans...	69,127,680
		Stock	14,068,542
		Sundries	16,265,512
		Profit and Loss ...	3,538,503
	436,461,902		436,461,902

The Bullion here represents more than one-third of the Notes issued, and the Bank was then, as other

State Banks at that time also were, in a comparatively stronger position than usual. The Bills discounted are not in the same proportion as in other similar Institutions, whilst the advances to the State are larger, and Loans on Mortgages are made, the Bonds for which are circulated. Although the Austrian National Bank is thus much less strong than other similar Institutions, yet so far as Austria is concerned, it is looked upon as the most solid institution in the country, and its Notes command confidence, though they are at a discount.

But it is in the other parts and branches of Austria's Financial System that the trouble and the difficulties of her position principally lie. The Austrian Government, with an enormous Debt (near 3,000 millions florins), and all manner of liabilities and embarrassments, generally finds that the State Expenditure exceeds the Revenue, and, unable to borrow Money, it has recourse to the expedient of issuing *State Notes*. These are *Forced Currency*, but they have no security in Bullion, and no guarantee whatever except the good faith of the Government. These State Notes amount to some *three hundred millions florins and more* (the exact total is not known to the public), and this issue is at present still on the increase. There is no prospect of the conversion of these Notes into Bullion; it is possible, however, that should Austria's credit enable her to raise another Loan in addition to the present overwhelming burden, that the Notes may be withdrawn at some future period. Thus, whilst the Notes of the National Bank

are secured by some reserve in Bullion, approaching our system of the Second Class (it is said that the public "hoard" them on this account), the State Notes, not being secured by any reserve whatever, belong to the lowest category of issues. The uncertainty of this position necessarily affects all the Austrian Paper Currency.

The **FOURTH CLASS** of Notes, in our scale of gradation, represents the most extreme position. The first remarkable failure of Paper Money occurred through the celebrated John Law's introduction of Mississippi and other Bonds in France in the first half of last century.* Other countries have also had to pass through their bitter experiences with Paper Money. The commercial history of England, before the present better system gained the ascendancy, tells of the suspension, at various times of private Note-issuing Banks. (The Note issue by private Banks and Bankers all over the country is now under the control of the Government). In America, long before the present State Paper Currency was thought of, there had been many attempts made to introduce a Private Bank Note system, which had, however, mostly resulted in disastrous failure. The most noteworthy modern instance of a complete collapse of a State Currency founded on Paper has been furnished quite recently by the late *Confederate States of North America*. The Government

* The disastrous results of the bursting of that gigantic bubble may, as has already been stated, be numbered among the prominent causes ultimately leading to the National Bankruptcy of France and to the French Revolution.

of these States found itself compelled, at the very outset of the Secession, to give up payment in Bullion, and to issue Notes to such enormous amounts, that the decline in the value of the latter kept in advance even of the rate of issue. And in the same measure, as the chances lessened of the Government holding its own ground, and acquiring stability, so did Gold rise in value, first from one hundred to five hundred, then to one thousand and more per cent., until at last *one dollar in Gold* would command *one hundred dollars in Notes*. A state of inextricable confusion ensued, and all commodities rose in price out of all proportion; flour, for instance, worth in England at the time thirty-two shillings, or about eight dollars a barrel, rose in Richmond to one hundred and fifty and even two hundred dollars; and laughable and absurd as the statement may appear, we have it upon the authority of the correspondents of the English Press that people going to market required a basket to carry the *lawful Money* of the land, which basket was quite large enough to carry back to their homes the produce which the *purchasing power* of this desirable Medium of Exchange enabled them to obtain. When the end came at last, and the would-be new nation fell to pieces, the *Confederate Currency* became of course absolutely *valueless*, and all the *promises to pay* made by Government authority, and confirmed by Government stamp, vanished into nothingness.

Misery unspeakable followed in this instance in the train of the experiment; the rights of property and labour were destroyed alike. Yet, fortunately, the evil

wrought had not leisure afforded it to strike deeper roots, and the restoration of a strong and healthy Government came just in time to check the downward course, and to save the unhappy land from immediate ruin.

We have so far confined our discussion here to the issue of Paper Money based on either Bullion or Government Guarantees. We have now to add a few brief remarks on the subject of the many projects started from time to time to create a Paper Currency based upon all kinds of property and value. Banks may be permitted, to a certain extent, to issue a Circulating Medium in Notes, based upon convertible Securities, Government Stock, Bills of Exchange, &c. ; but this can only be done in a very limited way, and at the Bank of England, at least, it is not done at all. Our projectors of schemes for issuing Notes on property are not content, however, with this limited range, nor does it appear that they have taken a lesson from the past history of exploded Bubbles, for we find them again and again raising the question of a Paper Currency, based on all sorts of Values. We will not discuss this topic here ; a single practical illustration will suffice to demonstrate the utter fallacy of such schemes.

Let us, then, for the sake of argument, agree to look upon all kinds of property as an effective basis for the issue of Notes, and to regard the value represented by such Notes as on a par with Coin. To make the illustration the more striking, let us select the

most real and substantial kind of property—Land and Houses. A, being possessed of £1,000 in money, invests this Capital in the purchase of a plot of land, or to make the matter still clearer, of a house of that value. He then issues a Note for £1,000, secured on the house, which Note, upon the above assumption, will pass current and circulate as Money. He now buys another house with this Note, also worth £1,000, and again issues a £1,000 Note upon this second acquisition of his. This second Note he again invests in the purchase of a third house, and so on; and if there were a hundred, or a thousand, or a million of houses in the Market, he might go on purchasing in the same way, and might thus ultimately secure the entire lot, and enjoy the rents thereof. Twenty houses, at £50 rent each, would yield a nice little income of £1,000 a year, and so on in proportion; and, in addition to this, A, would always still retain the power of raising another £1,000 upon the security of his last purchase. Now, as this entire superstructure of wealth rests solely and entirely upon the foundation of the first house purchased by A, with his original capital of £1,000, it is self-evident that this first house must really be worth infinitely more than its nominal value to A, or to anybody else in the same position.

Why, the whole thing is a simple absurdity, which cannot stand the test of a moment's serious examination. However, let us again, for the sake of argument, modify the assumption, to adapt it more closely to our notions of Collateral Security. Let us give A the power only to raise £750, or even only

£500, upon a house valued at £1,000. He accordingly issues a Note for £500, with which he buys another house, but this time of course one worth £500 only. Upon the security of this latter again he issues another Note to half the amount of the nominal value, say £250, with which he buys a third house, and raises upon this last purchase of his again £125. This makes a total of £875—raised so far upon his original capital of £1,000; he has thus, with his £1,000, purchased houses worth £1,875, and he has only raised upon each house half the value, and not a penny yet upon his last purchase. The rentals received will, by the end of a year or so, increase the £1875 to £2000, and thenceforth the value will go on increasing at a more rapid rate, like compound interest. The difference between the two forms of our proposition here is accordingly, after all, only one of degree: upon our first assumption, A's property would go on increasing, in arithmetical progression *ad infinitum*, and so would of course also the number of Notes thrown by him on the money market; whilst, in the second case assumed, the increase would progress at a much slower rate indeed, yet in the end the result would be pretty much the same. And mind, we have not yet touched, in our examination of this question, upon another most important element in it—*Competition*. There are many other people who would like to do the same thing as A; and every additional competitor would, of course, accelerate the rate of progression in the increase of the Paper Currency thus easily created. We have selected the most substantial kind of property—Land

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		Sundries	16,265,512
		Profit and Loss ...	3,538,503
	436,461,902		436,461,902

The Bullion here represents more than one-third of the Notes issued, and the Bank was then, as other

State Banks at that time also were, in a comparatively stronger position than usual. The Bills discounted are not in the same proportion as in other similar Institutions, whilst the advances to the State are larger, and Loans on Mortgages are made, the Bonds for which are circulated. Although the Austrian National Bank is thus much less strong than other similar Institutions, yet so far as Austria is concerned, it is looked upon as the most solid institution in the country, and its Notes command confidence, though they are at a discount.

But it is in the other parts and branches of Austria's Financial System that the trouble and the difficulties of her position principally lie. The Austrian Government, with an enormous Debt (near 3,000 millions florins), and all manner of liabilities and embarrassments, generally finds that the State Expenditure exceeds the Revenue, and, unable to borrow Money, it has recourse to the expedient of issuing *State Notes*. These are *Forced Currency*, but they have no security in Bullion, and no guarantee whatever except the good faith of the Government. These State Notes amount to some *three hundred millions florins and more* (the exact total is not known to the public), and this issue is at present still on the increase. There is no prospect of the conversion of these Notes into Bullion; it is possible, however, that should Austria's credit enable her to raise another Loan in addition to the present overwhelming burden, that the Notes may be withdrawn at some future period. Thus, whilst the Notes of the National Bank

are secured by some reserve in Bullion, approaching our system of the Second Class (it is said that the public "hoard" them on this account), the State Notes, not being secured by any reserve whatever, belong to the lowest category of issues. The uncertainty of this position necessarily affects all the Austrian Paper Currency.

The **FOURTH CLASS** of Notes, in our scale of gradation, represents the most extreme position. The first remarkable failure of Paper Money occurred through the celebrated John Law's introduction of Mississippi and other Bonds in France in the first half of last century.* Other countries have also had to pass through their bitter experiences with Paper Money. The commercial history of England, before the present better system gained the ascendancy, tells of the suspension, at various times of private Note-issuing Banks. (The Note issue by private Banks and Bankers all over the country is now under the control of the Government). In America, long before the present State Paper Currency was thought of, there had been many attempts made to introduce a Private Bank Note system, which had, however, mostly resulted in disastrous failure. The most noteworthy modern instance of a complete collapse of a State Currency founded on Paper has been furnished quite recently by the late *Confederate States of North America*. The Government

* The disastrous results of the bursting of that gigantic bubble may, as has already been stated, be numbered among the prominent causes ultimately leading to the National Bankruptcy of France and to the French Revolution.

of these States found itself compelled, at the very outset of the Secession, to give up payment in Bullion, and to issue Notes to such enormous amounts, that the decline in the value of the latter kept in advance even of the rate of issue. And in the same measure, as the chances lessened of the Government holding its own ground, and acquiring stability, so did Gold rise in value, first from one hundred to five hundred, then to one thousand and more per cent., until at last *one dollar in Gold* would command *one hundred dollars in Notes*. A state of inextricable confusion ensued, and all commodities rose in price out of all proportion; flour, for instance, worth in England at the time thirty-two shillings, or about eight dollars a barrel, rose in Richmond to one hundred and fifty and even two hundred dollars; and laughable and absurd as the statement may appear, we have it upon the authority of the correspondents of the English Press that people going to market required a basket to carry the *lawful Money* of the land, which basket was quite large enough to carry back to their homes the produce which the *purchasing power* of this desirable Medium of Exchange enabled them to obtain. When the end came at last, and the would-be new nation fell to pieces, the *Confederate Currency* became of course absolutely *valueless*, and all the *promises to pay* made by Government authority, and confirmed by Government stamp, vanished into nothingness.

Misery unspeakable followed in this instance in the train of the experiment; the rights of property and labour were destroyed alike. Yet, fortunately, the evil

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We have so far confined our discussion here to the issue of Paper Money based on either Bullion or Government Guarantees. We have now to add a few brief remarks on the subject of the many projects started from time to time to create a Paper Currency based upon all kinds of property and value. Banks may be permitted, to a certain extent, to issue a Circulating Medium in Notes, based upon convertible Securities, Government Stock, Bills of Exchange, &c.; but this can only be done in a very limited way, and at the Bank of England, at least, it is not done at all. Our projectors of schemes for issuing Notes on property are not content, however, with this limited range, nor does it appear that they have taken a lesson from the past history of exploded Bubbles, for we find them again and again raising the question of a Paper Currency, based on all sorts of Values. We will not discuss this topic here; a single practical illustration will suffice to demonstrate the utter fallacy of such schemes.

Let us, then, for the sake of argument, agree to look upon all kinds of property as an effective basis for the issue of Notes, and to regard the value represented by such Notes as on a par with Coin. To make the illustration the more striking, let us select the

most real and substantial kind of property—Land and Houses. A, being possessed of £1,000 in money, invests this Capital in the purchase of a plot of land, or to make the matter still clearer, of a house of that value. He then issues a Note for £1,000, secured on the house, which Note, upon the above assumption, will pass current and circulate as Money. He now buys another house with this Note, also worth £1,000, and again issues a £1,000 Note upon this second acquisition of his. This second Note he again invests in the purchase of a third house, and so on; and if there were a hundred, or a thousand, or a million of houses in the Market, he might go on purchasing in the same way, and might thus ultimately secure the entire lot, and enjoy the rents thereof. Twenty houses, at £50 rent each, would yield a nice little income of £1,000 a year, and so on in proportion; and, in addition to this, A, would always still retain the power of raising another £1,000 upon the security of his last purchase. Now, as this entire superstructure of wealth rests solely and entirely upon the foundation of the first house purchased by A, with his original capital of £1,000, it is self-evident that this first house must really be worth infinitely more than its nominal value to A, or to anybody else in the same position.

Why, the whole thing is a simple absurdity, which cannot stand the test of a moment's serious examination. However, let us again, for the sake of argument, modify the assumption, to adapt it more closely to our notions of Collateral Security. Let us give A the power only to raise £750, or even only

£500, upon a house valued at £1,000. He accordingly issues a Note for £500, with which he buys another house, but this time of course one worth £500 only. Upon the security of this latter again he issues another Note to half the amount of the nominal value, say £250, with which he buys a third house, and raises upon this last purchase of his again £125. This makes a total of £875—raised so far upon his original capital of £1,000; he has thus, with his £1,000, purchased houses worth £1,875, and he has only raised upon each house half the value, and not a penny yet upon his last purchase. The rentals received will, by the end of a year or so, increase the £1875 to £2000, and thenceforth the value will go on increasing at a more rapid rate, like compound interest. The difference between the two forms of our proposition here is accordingly, after all, only one of degree: upon our first assumption, A's property would go on increasing, in arithmetical progression *ad infinitum*, and so would of course also the number of Notes thrown by him on the money market; whilst, in the second case assumed, the increase would progress at a much slower rate indeed, yet in the end the result would be pretty much the same. And mind, we have not yet touched, in our examination of this question, upon another most important element in it—*Competition*. There are many other people who would like to do the same thing as A; and every additional competitor would, of course, accelerate the rate of progression in the increase of the Paper Currency thus easily created. We have selected the most substantial kind of property—Land

and Houses; how much more impracticable would the proposition appear if all other kinds of property were equally made a basis for the issue of Notes!

The foregoing illustration clearly demonstrates the utter impracticability of all attempts to create a permanent artificial Currency. Simple and natural as the Proposition to found a Paper Currency based on Property may appear upon a mere superficial view of the matter, yet, if such a system were ever practically introduced, the prices of all commodities would rise in the most abnormal fashion; and this must inevitably lead in the end to produce that state which is the greatest dread of all Political Economists—*Inflation* in its extremest form. The projectors of such schemes as a private Paper Currency never take into account the necessity of providing ultimately for the redemption of the Notes, and their conversion into Cash, and of giving up the Guarantee Property on the original terms, without the least regard to its artificially inflated value; nor is any provision made in their schemes for deterioration and reduction of value from natural causes.

Now, if all this seems sufficiently nonsensical, how much more extravagantly absurd must not the cool proposition appear, which we find so frequently made, of permitting the issue of Private Notes not resting on the security of any property whatever? We occasionally have heard some of our theorists say, “Why should I not issue my own Promissory Note payable to bearer, and circulate it as Money, pledging my credit for its value?” There are many ardent free

traders who advocate such a course ; fortunately, the State Authorities forbid private individuals to issue such Notes payable to bearer.

The only legitimate way in which property can be made to perform a part in the creation of representative value is by means of legally executed instruments (Mortgages, Assignments, and Deeds of various kinds), in which it constitutes the basis or security ; and such instruments are unsuitable for the purposes of a Currency. The only legitimate way in which personal credit, with or without the collateral security of property, can be made to serve in the creation of a temporary Medium, is by means of Bills of Exchange, which, in obedience to the dictates of experience, have, for the protection of all interests, been invested by law with a character distinct from that of Actual Money. But even with the laws, regulations and limitations which govern the issue and circulation of such instruments, it is difficult to guard against *inflation*, which, as we all know, lies at the bottom of all *depression*, and is apt to bring on *mercantile distress*, and *monetary crises* and *panics*. The only efficient safeguard against the bane of inflation is prudent moderation in all financial and commercial transactions and operations. The Banker must limit his advances on mortgage or real property ; the Capitalist must not be too liberal in taking shares ; the Merchant must avoid granting too many acceptances on merchandise or credit ; for it is by these means that speculation and competition are enabled to force prices beyond their real value, in spite of

the sound principles of supply and demand. If these axioms are neglected—and they are neglected or forgotten occasionally, when a portion of the mercantile community will follow the lead of speculation—inflation takes place, which inevitably leads to a crash: the law of supply and demand strongly asserts its ascendancy, and, with a rude and unsparing hand, destroys the fictitious prosperity of the preceding period of overtrading.

Thus far then we have stated, as succinctly and clearly as possible, our views on the comparative worth of a Hard Cash and a Paper Currency, and endeavoured to demonstrate that Bullion is truly and legitimately the measure of Value. We trust that we have succeeded also in establishing a proper understanding on the subject of Currency generally, and on the causes which lead to a *depreciation* of *Paper Money*, since this has an important bearing upon the question of the *Foreign Exchanges*, as will be shown hereafter.

CHAPTER IV.

BILLS.

BILLS, in their various forms, are *Mediums of Exchange*, but they are not *Currency*, which, whether the *free* or the *conditional*, has a direct action of its own, not limited by restrictions. The simple act of tendering and handing over the amount of a debt in legal Currency terminates the liability of payment involved.

Currency (in Metal or in Paper) is established and authorised by Government, and Government is responsible for its value. This invests Currency with a public character, and makes its universal acceptance a matter of *general contract* by the consent of all parties. Whereas Bills of Exchange are simply matters of private agreement, for which Government is not responsible. The responsibility here attaches solely to individuals, and the acceptance of the instrument as a representative of value is merely a matter of *private or personal contract*. The responsibility of the parties to a Bill remains engaged until the instrument is converted into actual Currency, in conformity with the terms of this contract.

Currency circulates freely by general consent, whilst Bills of Exchange only circulate amongst the parties more immediately concerned, upon private

terms of understanding, and under certain formalities and restrictions, which impart a special and distinct character to these instruments.

Bills are Mediums of Exchange, inasmuch as they serve to convey certain definite amounts of value, fixed and expressed in terms of Currency, from one hand to another, and from place to place. Value may, indeed, be procured and conveyed from place to place in the shape of all kinds of moveable property and merchandise sold and forwarded in Exchange for Currency. But this involves the questions of bargain and sale, the fluctuations of price, the cost of transport, and the uncertainty attendant upon the conveyance of the articles. State Bonds, Stocks, Shares, and valuable Securities generally, which are equally moveable representatives of value, are, in their realisation, liable to fluctuations of price, and cannot therefore properly be termed Mediums of Exchange.

Now, Bills bear on the face of them, like Currency, a definite declaration of their nominal value, and it is expected that their realisation will be effected in due time in actual Currency to the exact amount for which they are drawn. They may accordingly serve as real Mediums of Exchange, and in that character as *Economisers* of Currency.

We have no positive evidence as to the time when Bills were first invented: the first mention we find made of them does not go further back than the Middle Ages. However, it is very likely that they were in use long before, in some form or other, and their origin

wrought had not leisure afforded it to strike deeper roots, and the restoration of a strong and healthy Government came just in time to check the downward course, and to save the unhappy land from immediate ruin.

We have so far confined our discussion here to the issue of Paper Money based on either Bullion or Government Guarantees. We have now to add a few brief remarks on the subject of the many projects started from time to time to create a Paper Currency based upon all kinds of property and value. Banks may be permitted, to a certain extent, to issue a Circulating Medium in Notes, based upon convertible Securities, Government Stock, Bills of Exchange, &c. ; but this can only be done in a very limited way, and at the Bank of England, at least, it is not done at all. Our projectors of schemes for issuing Notes on property are not content, however, with this limited range, nor does it appear that they have taken a lesson from the past history of exploded Bubbles, for we find them again and again raising the question of a Paper Currency, based on all sorts of Values. We will not discuss this topic here ; a single practical illustration will suffice to demonstrate the utter fallacy of such schemes.

Let us, then, for the sake of argument, agree to look upon all kinds of property as an effective basis for the issue of Notes, and to regard the value represented by such Notes as on a par with Coin. To make the illustration the more striking, let us select the

exercised upon the trade of the world has been most beneficial ; and it is very questionable whether but for them the material prosperity of civilised nations would have attained the present high development. They serve to facilitate the largest and most important transactions in Home and International Commerce ; and the greater part of the Import and Export Trade between the various countries is conducted by their agency. Resting as they do on a Currency basis, they serve to balance the Debit and Credit between two countries, and the actual transmission of Bullion is only required when the final Balance is positively declared.

From the high social importance of the Bill system the abuses to which it is naturally liable, and the proper means of guarding against them have always occupied the attention of the different Governments, and special laws have been passed to regulate the proper action of the system. Compliance with certain strict forms, rules, and customs, according to law, is absolutely indispensable to establish clear rights of claims in connection with Bills of Exchange.

In England we have no special consolidated law on Bills of Exchange ; but the matter is governed by a number of Statute laws, and by certain commercial rules and customs which have acquired a species of legal force.* In France the Code Napoleon contains

* The well-known series of Wilson's Legal Handy Books contains an exceedingly useful publication on the law of Bills, Cheques, Notes, &c., by J. W. Smith, Esq., LL.D. Effingham Wilson, Royal Exchange. Price 1s.

the legal enactments and provisions in reference to Bills of Exchange. But it is in Germany that the most complete and satisfactory legislation on the subject is to be found, in the so-called *General German Law on Bills of Exchange* (*Allgemeine Deutsche Wechsel Ordnung*), which has been adopted by all the German States within the last fifteen years.

Most Governments derive a considerable income from taxing Bills of Exchange by means of a *compulsory Stamp*, the evasion of which not only divests Bills of Exchange of all legal value, but renders the parties concerned liable to certain penalties. In foreign countries the usual Stamp duty is one-half per mille on the amount. We give the *Schedule of British Bill Stamps* at foot.*

* BILLS AND PROMISSORY NOTES.

		s	d			s	d	
Not exceeding ...	£5	0	1	Exceeding £400 and	}			
Exc. £5 not exc.	10	0	2	not exceeding £500		0	5	0
„ 10 „	25	0	3	„ 500 „	750	0	7	6
„ 25 „	50	0	6	„ 750 „	1000	0	10	0
„ 50 „	75	0	9	„ 1000 „	1500	0	15	0
„ 75 „	100	1	0	„ 1500 „	2000	1	0	0
„ 100 „	200	2	0	„ 2000 „	3000	1	10	0
„ 200 „	300	3	0	„ 3000 „	4000	2	0	0
„ 300 „	400	4	0	„ 4000 „	5000	2	10	0

And 10s for every additional £1000, or part thereof.

FOREIGN BILLS OF EXCHANGE drawn or negotiated in but payable out of the United Kingdom, in sets of three or more, for every Bill of each set one-third of Inland duties. If drawn singly and not in sets, or if drawn out of but payable within the United Kingdom, same as Inland duties.

The general term “Bills” comprises all Paper Mediums of Exchange, excepting those previously designated and described here as *Paper Currency*. There are four principal Classes of them, viz. :

Letters of Credit.
Bankers' Cheques.
Promissory Notes.
Bills of Exchange.

LETTERS OF CREDIT may be considered the most primitive form of the Bill system. They are generally written on a plain letter sheet, and contain a request from one firm to another to pay over a certain amount of money to a third party ; they are frequently used also as letters of introduction and recommendation at the same time. The following is a common form of a letter of Credit :—

London, 1st May 1866.

Messrs. B. B. & Co., Paris.

Gentlemen,—We have great pleasure in herewith introducing to you Mr. N. N., who visits your city for purposes of business, and we beg to recommend him to your kind attentions. At the same time we herewith open a credit in his favour for ONE HUNDRED POUNDS, and request you to pay over this amount to him at his desire. His signature we have forwarded to you in another letter.

We remain, Gentlemen,

Your obedient Servants,

A. & A.

Now, such a document (the wording and style of which may of course be varied as may suit the taste of the writer) undoubtedly bears on the face of it a certain value. But suppose that it is not *honoured* ;

what then is Mr. N. N.'s position in reference to it? It may be that the writers of the letter simply wished to do an act of kindness to Mr. N. N., and place money at his disposal should he require it, without having previously received *money* or *value* from him, or on his account. The result in that case is simply this: N. N. holds a valueless document, as he cannot go back to A. & A. and claim money from them for which he has not given them an equivalent. But supposing even that he did lodge with them £100, the letter itself states nothing of the fact, and is therefore no acknowledgment or proof to him that he has done so; he would therefore have to return to London, and sue A. & A. for his £100; and he must bring forward other positive proof than the mere Letter of Credit (which can only serve as collateral evidence) in order to make good his claim.

The following is another form of Letter of Credit:—

Messrs. W. R. & C., Paris.

Please hold at the disposal of Messrs. D. O. & C. the sum of
 TWENTY THOUSAND FRANCS, *and charge the same as per advice.*

We are, yours faithfully,

B. & H.

A Letter of Credit of this kind is called a *delegation*. It is a somewhat simpler document than the former, and has more of a business air about it. Such delegations are now frequently used between merchants, principally because the stamp duty on Bills is thereby avoided; but there is this drawback about them, on the other hand, that they are of the same

invalid character in point of law as the first form ; and, in case of *non-payment*, they can only serve as collateral evidence of the original basis of the transaction.

Something more is therefore wanted to make this species of Medium of Exchange fully available, not only as a direct means of payment in the first instance, but also as effectively constituting in itself an undoubted claim on the writer in case of non-payment.

The so-called *Letters of Credit* and *Circular Notes* issued by Bankers belong to this category ; but the question as to their validity is not often raised, and as they are not important for purely commercial purposes, we may content ourselves here with this bare allusion to them.

BANKERS' CHEQUES.—A Cheque is an order drawn upon a Banker to pay a certain sum to the Holder on demand. In this respect it resembles a Letter of Credit.

Cheques are payable on demand, and formerly the words *on demand* were incorporated in the form ; they now usually run as follows :—

London, 1st Dec. 1867.

To the LONDON AND COUNTY BANK, Lombard Street.

Pay to James Smith, or Bearer, THREE HUNDRED POUNDS.
£300.

WILLIAM BROWN & Co.

With this Cheque James Smith, or any one else whom he may make the Bearer, can go to the Bank indicated, and provided that William Brown & Co. have money there sufficient for the purpose, he will receive the £300 against the surrender of the Cheque.

If the Cheque is crossed, *i.e.* if two lines, with the name of a Bank or Banker between, or the word Co. in lieu thereof, are drawn across the Cheque, custom requires that the document should be presented for payment by the Banker specially named on the face of it, or through some other Banker or Bank. This is a precaution which works well, and protects the owner in case of irregular or illegal possession of the document by other parties not entitled to it.

If the Banker refuses to pay the money, the Holder can go back to the Drawer and demand payment from him, or institute legal proceedings against him. Formerly a Cheque was merely held evidence of debt; but since the introduction of another form, having the word *Order* substituted for that of *Bearer*, an action may be brought at law upon a Cheque, which, so drawn, is very nearly subject to the same regulations, and has very nearly the same effect as a Bill of Exchange. Nevertheless it is not so complete an instrument. Unless it be made payable to Order, and bear Indorsements consequent thereon, the only party liable on a Cheque is the one who has issued it. Its circulation is effectually limited by the necessity on the part of the Holder to present it for payment with all practicable speed. If he waits longer than a day, and if the Bank meanwhile stops payment, he has no claim on the Issuer, or even against the Indorsers (provided the Issuer had at the time funds sufficient at the Bank); but he has, in that case, to bear the loss himself.

In England a Cheque is a most important instru-

ment in commercial intercourse. In foreign countries (excepting the United States) Cheques are in but very restricted use. But they form an essential feature in our English Banking system, and replace, to a great extent, the employment of actual Money.

Many millions worth of accounts are settled daily by Cheques drawn on Bankers. By means of the *Clearing House* the Bankers in London again exchange accounts between themselves with the Cheques collected daily in each hand. This magnificent system serves to greatly facilitate what would otherwise be sure to prove a most laborious settlement of accounts by Money payments. The saving of labour, time and expense effected by it is obviously an advantage which must have an appreciable beneficial influence upon the commercial prosperity of the country.

Wide-spread and important as is the use of Cheques as *Economisers of Currency*, in the settlement of all sorts of accounts, the individual career of these instruments is necessarily very brief; and in their capacity as *Mediums of Exchange* they do not bear on the face of them a clear definition of the rights and claims, and the liabilities of the several parties concerned, as is the case with Bills of Exchange.

PROMISSORY NOTES.—A Promissory Note is a written promise by one party to pay a certain sum to another party. Promissory Notes are usually drawn in the following form :—

£20.

London, 1st Dec. 1867.

On Demand, I promise to pay to Mr. SAMUEL ROBINSON the sum of TWENTY POUNDS.

JOHN WILLIAMS.

This constitutes a mere obligation to hand £20 to S. Robinson, whenever demanded.*

We have already mentioned that the law forbids the issuing of Promissory Notes payable to Bearer, except under special sanction, as in the case of Bank Notes.

The following is another form of a Promissory Note :—

£800.

London, 1st Dec. 1867.

On the 1st February 1868, I promise to pay to S. ROBINSON, or Order, the sum of EIGHT HUNDRED POUNDS, for Value Received.

JOHN WILLIAMS.

In this case the payment is not promised on demand, but on a certain future day distinctly specified—in the instance here before us two months after date; which accordingly implies a *credit* to John Williams. The Note is made payable to Samuel Robinson, or *Order*, which means that Robinson can order payment to be made to somebody else. It is also expressly stated that the payment to be made is *for Value Received*, indicating that a transaction of some kind has taken place between the parties, which has led to the making of the Note. A document of this kind will serve in the same way as a complete Bill of Exchange, and is subject to the same general law as the latter.

BILLS OF EXCHANGE.—A complete Bill of Exchange, drawn on a proper model, ought to provide

* The so called I O U's (I Owe You) in England are mere acknowledgments of indebtedness to particular persons.

for all interests involved, and should clearly define the positions, rights and liabilities of all the parties whose names are attached to it.

A complete Bill of Exchange is usually drawn in the following form :—

£250

Birmingham, 1st Dec. 1867.

Three Months after date please pay this Bill of Exchange to Messrs. RICHARD IRVING & Co., or Order, the sum of TWO HUNDRED POUNDS Sterling, for Value received, and charge the same to account, as advised by

HARFORD & Co.

To Messrs. TANNER BROTHERS, London.

The Acceptance of the party on whom it is drawn is written across, in this fashion :—

Accepted, Payable 4th March 1868, at the UNION BANK OF LONDON.*

TANNER BROTHERS.

The Bill may bear Indorsements written on the back, as the following, for instance :—

Pay to the Order of JAMES BARBER, Esq., for Value received.
Liverpool, 3rd Dec., 1867.

RICHARD IRVING & Co.

Pay Messrs. MACGREGOR & Co., or Order, Value in Account.
London, 10th Dec. 1867.

JAMES BARBER.

The *parties* to this Bill are Harford and Co., the *Drawers*, addressing Tanner Brothers as the *Drawees* and subsequent *Acceptors*; Richard Irving & Co., the *Remittees* or first *Payees*, who by their *Order*, in the first Indorsement on the back of the Bill, constitute James Barber *Payee* in their stead; the second Indorsement transfers Barber's claim to Macgregor & Co., the

* This due date includes the three days' grace allowed by the English law on all Bills of Exchange.

actual *Holders* of the Bill, who may again Indorse it to other parties.

In the wording of the document the term *Bill of Exchange* is introduced; the Bill has been handed by Harford & Co. to Irving & Co., for *Value Received*, showing thereby that a *consideration* has passed between them, which may sometimes arise, also, from *Value in Account*. The relations between the Drawers and Tanner Brothers are expressed by the words, “*and charge the same to account.*” The first Indorsement to James Barber states for *Value received*; the second one for *Value in Account*, which makes the difference between the two.

Bills so executed are *full* or *complete* documents, and the terms here used in the wording are designed to serve as *primâ facie* evidence of the *bonâ fide* nature of the business between all parties; the use and effect of these terms may be found, more especially, in the event of law suits arising, from some cause or other, in reference to Bills of Exchange.

In England this practice is not invariably followed, and a Bill drawn in the following form is often considered sufficient :—

£250.

Birmingham, 1st Dec. 1867.

Three months after date pay RICHARD IRVING & Co., or Order, Two HUNDRED AND FIFTY POUNDS.

HARFORD & Co.

To Messrs. TANNER BROTHERS.

Tanner Brothers may Accept this Bill by writing the word *Accepted* across the same, and above their signature; or they may simply affix their signature to any part of the Bill, in order to constitute a valid acceptance.

Instead of a full Indorsement the parties may simply write on the back :—

Pay Mr JAMES BARBER, or Order.

RICHARD IRVING & Co.

without stating date or consideration ; this is called an *Incomplete* Indorsement ; or the name

RICHARD IRVING AND Co.

may simply be written across the back, without any directions, when it is called a *Blank* Indorsement.

These departures from the strict form of an original Bill of Exchange are permitted in England, and the *Blank* Indorsement has become a custom extensively adopted, being especially convenient to large Discount houses, who can thereby, under a separate guarantee, transfer such Bills as securities. In ordinary practice, where *Blank* Indorsements are not necessary, a *complete*, or, at least, an *incomplete* Indorsement is always desirable. The finder of a Bill, Indorsed in *Blank*, might improperly fill out the Indorsement to his own name and order, and obtain value for it ; in which case, unless the loser can give timely notice to the Payer—and unless he can at the same time prevent third parties from negotiating the Bill in a *bonâ fide* manner (a thing scarcely possible), he would finally lose the money.

On the Continent generally the regulations are more strict, especially in regard to Indorsements, which must be complete in order to answer all legal requirements. We mark these distinctions here as essential in theory, even if not of such absolute importance in practice.

Bills of Exchange payable at once are used as means of conveying Cash from one person or place to another; but if payable at some future period, they involve the consideration of *Credit*. The Acceptor promises to pay at a given date, and if he fails to do so at the appointed time, the Holder can hand back the Bill to the Indorser immediately before him, from whom he has, or is supposed to have, received it, and claim reimbursement. The Indorser can fall back upon the next before him, and so on till the Bill is returned to the party to whom it was first made payable; he, in his turn, can claim upon the Drawer. The Drawer, having satisfied the last claimant, stands in the original position to the Acceptor, who is his debtor, and against whom he can now proceed. The *Credit* value of the Bill is therefore increased in proportion as Indorsements are added, and this value is reduced again, in case of non-payment, by the successive discharges of one Indorsement after another. In cases where the party on whom a Bill is drawn refuses to Accept, he incurs no liability on the Bill, but the liabilities of the Drawers and Indorsers remain, and can be enforced in the way already indicated. If the last Indorser is unable to pay, the Holder may turn upon the next in succession, until he finds one of the parties able to pay; if the whole of them are unable to do so, then he can claim jointly and severally against Drawer, Acceptor (if accepted), Payee, and Indorsers, until the amount is discharged. No Indorser, however, can claim against another standing below him in the order of succession on the back of the Bill.

The question of *Credit* involved in this does not here concern us. This is a subject with which the Banker, Merchant, or Trader must deal on separate and special grounds. The various degrees of *Solvability*, in the commercial meaning of the term, are determined by experience; and *that* cannot be taught in this volume.*

If the engagement undertaken by the Acceptor be duly fulfilled, the Bill will have run its proper course to the end, and there will be no retrospective disturbance of the several payments, which it may have facilitated and represented in passing from hand to hand. But if, from any cause, the Bill should not be paid at maturity, it becomes the duty of the Holder to *Protest* it.

The term Protest was probably invented by the Lombards, who, in their amazement at so serious a breach of mercantile faith as the non-payment of a Bill of Exchange, felt bound to *protest* against it. When a Bill is represented for Acceptance or for Payment, and either is refused, the Holder, in order to protect his right against the Drawer or Indorsers preceding him, is bound to make *Protest*. He must send the Bill to a Notary, who then presents it once more to the Drawee, and if again dishonored, records the fact, and levies Protest in due form. The Protest then becomes the title by which the Holder can claim upon all the other parties on the Bill, to whom he gives notice in the first instance of the dishonor, as

* Mr. Gilbert's Work on Banking, &c., contains the best treatise known on the subject of Credit.

an intimation of his intended reclamation. It is clear that this Protest is necessary, not as a mere formality for the recording of the several interests concerned, but as a protection to all and each of them. Suppose that the Bill would have been duly honored if it had been duly presented, but that the Holder, from neglect or malice, chooses to return it to the preceding Indorser, falsely alleging that it has been dishonored: he might thereby seriously affect both the Acceptor and the Indorser's interests, and wrongfully cause embarrassment. It is only right therefore that his own evidence should not be relied upon in proof of the alleged dishonor; and that a Public Officer—a Notary—as an independent party not concerned in the Bill, should verify the fact.

In England, *Noting* is generally looked upon as a sufficient *Protest*. *Noting a Bill* means that the Notary records the non-acceptance or non-payment thereof, and affixes a small notice to it, briefly stating the cause of refusal; and this has all the necessary legal effect. For business abroad, however, he may afterwards, or at once, be required to *extend Protest*, and thereupon issue the usual formal document. On the Continent full Protests are generally made at once.

BILLS OF EXCHANGE are either

Inland Bills, or

Foreign Bills.

They are also, according to the time they have to run, either

Short Bills, or

Long Bills.

Cheques, Bankers' Drafts at sight, Bank Post Bills, &c., are Short Bills of Exchange.

The following examples need no further explanation :—

INLAND BILLS OF EXCHANGE.

£50.

Bank of Bristol, 1st Dec. 1867.

Three days after date pay to the Order of Messrs. FAIRMAN & Co. the sum of FIFTY POUNDS, as advised.

*To Messrs. WILLIAMS & Co.,
London.*

WM. RATHBONE,
Manager.

This is a usual Bankers' Draft, payable (including the three days grace) on the 7th December, and is a *Short Bill*.

£100.

Manchester, 1st December 1867.

Two months after date please pay this Bill of Exchange to JOHN BARBER, Esq., or Order, ONE HUNDRED POUNDS Sterling, Value in Account, as advised by

LESSING BROTHERS.

To JOHNSON & SMITH, Liverpool.

Suppose to-day is the 2nd of Feb. 1868, the above Bill, drawn on the 1st Dec. 1867, at two months, would be due (with three days grace added) on the 4th Feb., the day after to-morrow; it is, therefore, although it was a two months' Bill on the 1st Dec. 1867, a *Short Bill* now.

Bills of less than ten days to run are considered *short* Bills; those having more than that number of days to run, say twenty days, or one month or two months, belong already to the class called *long* Bills; but the term *long* is specially applied to *three months* Bills.

£500.

London, 1st Dec. 1867.

Three months after date please pay to our Order the Sum of FIVE HUNDRED POUNDS, for Value Received, as advised by

*Messrs. FORSTER BROTHERS,
London.*

JEFFREY & BROWN.

This is probably a *Trade Bill*, drawn by a warehouseman upon a merchant or retail house. It is drawn to *our Order*, so that Jeffrey & Brown themselves become the first Indorsers.

The following Bill may be by a manufacturer upon a London shipping house :—

£1000.

Sheffield, 1st Dec. 1867.

Six months after date please pay this Sola Bill of Exchange to the Order of HALLIDAY, SONS & Co., ONE THOUSAND POUNDS Sterling, for Value Received, and charge to account of

Messrs. SAMSON & Co., London.

FINLAYSON & HART.

Bills drawn at four, five, or six months, like the above, are subject to special rates of discount.

FOREIGN BILLS OF EXCHANGE are either :—

1. Bills drawn abroad, but payable in the United Kingdom.
2. Bills drawn in the United Kingdom, but payable abroad.
3. Bills drawn and payable abroad, but negotiated in the United Kingdom.

Examples of Class 1 :—

Paris, 30th Nov. 1867.

At sight pay this Sola Bill of Exchange to Mr. JAMES RYAN, THREE HUNDRED AND TWENTY POUNDS Sterling, as advised by

Messrs. DOLBY, WADE & Co., London.

LECOMTE & PEREZ.

£35.

Cologne, 15th Nov., 1867.

Fourteen days after date pay this Bill of Exchange to the Order of our Own, THIRTY-FIVE POUNDS Sterling, Value in Ourselves, and place the same to account as per advice of Your obedient Servants,

To the Joint Stock Bank, London.

SCHNEIDER & Co.

These are both *short* Bills, and so-called *Solas*, or single Bills. Their loss, by post or otherwise, may cause inconvenience.

£187 10s.

Berlin, 12th Oct. 1867.

Two months after date pay this first of Exchange (second and third of the same tenor and date unpaid) to the Order of Messrs. WALTER & Co., the sum of ONE HUNDRED AND EIGHTY-SEVEN POUNDS TEN SHILLINGS Sterling, Value received, and charge the same to account.

F. VOSS.

Messrs. MERRY BROTHERS, Liverpool.

In case of need, with Messrs. FORD & RILEY.

This is a *first* of Exchange; the *second* or *third* of the same tenor and date are intended to be used in the event of the *first* being lost. There is also a *case of need* provided for, perhaps by one of the Indorsers of the Bill, who corresponds with Ford & Riley in London; should the Bill be dishonored, Messrs. Ford & Riley, seeing the signature of their friend, will *interfere* on his behalf, and take up the Bill.

£1500.

New York, 1st Nov. 1867.

Sixty days after sight please pay this second of Exchange (first and third unpaid) to FORSTER STEVENS, Esq., FIFTEEN HUNDRED POUNDS Sterling, Value of the same, as advised by

GRANT, DUNCAN & Co.

Messrs. THOROGOOD BROTHERS & Co.,

London.

First Accepted with FARBRIDGE & Co.

This is a second of Exchange, *first Accepted with*

Farbridge and Co., another house in London, who, having procured the Acceptance to the *first*, keep this *first accepted* in their custody, to surrender it to the Holder of the second. Instead of a *second or third* Bill, a so-called *copy* may also be used.

£2300.

Shanghai, 1st Sept., 1867.

Six months after sight please pay this first of Exchange (second and third unpaid) to the Order of the CHINA BANKING CO., TWO THOUSAND THREE HUNDRED POUNDS Sterling, for Value received, as per shipments of Tea. W. R. per 'Flying Cloud.'

B. DERRANT & Co.

Messrs. FRY & DAWSON, London.

This Bill, drawn "as per shipments of Tea," shows on the face of it why it was made; the China Bank may hold other *documents, i.e.*, Bills of Lading and Insurance Policy, as security, which they will surrender to Fry and Dawson against Acceptance or Payment.

Foreign Bills payable in the United Kingdom vary, of course, greatly in the degree of credit they severally command in the market; those drawn upon Banks, Bankers, and commercial houses of the highest standing, form the so-called *first class foreign Bills*, or *first class remitted Bills*. Then there are good *second class foreign Bills*, &c. &c., down to inferior paper of all sorts.

Class 2.

Bills drawn in the United Kingdom, but payable abroad.*

* We give all these forms in English, for the sake of general convenience.

Examples :—

Fs. 3000.

London, 30th Nov. 1867.

At sight please pay to Monsieur VICTOR MENNOIER, or Order, the sum of THREE THOUSAND FRANCS, Value Received, as advised.

J. BARRON & Co.

To the SOCIÉTÉ DU COMMERCE, Paris.

This is an ordinary short Bill, drawn at the sight Exchange.

M^s. B^{co}. 1500.

Liverpool, 14th Nov. 1867.

At ten days date, pay this Sola of Exchange to the Order of LYALL, SONS & Co., FIFTEEN HUNDRED MARCS BANCO, Value in Account, and charge the same as per advice.

B. & C. TORRENS.

Messrs. SCHRAMM & Co., Hamburg.

This is a short Bill on Hamburg.

£400.

Sheffield, 1st Dec., 1867.

Thirty days after sight please pay this first Bill of Exchange (second and third unpaid) to the Order of Ourselves, FOUR HUNDRED POUNDS Sterling, Value in Ourselves, as per advice of to-day.

IRONMONGER BROTHERS.

To Mr. A. NICHOLSON, Halifax (Nova Scotia).

Although Nova Scotia is an English Colony, the Bill is Foreign.

Dols. 1576. Cts. 55.

Manchester, 1st Dec. 1867.

Sixty days after sight please pay this first of Exchange (second and third not paid) to the Order of the BANK OF BRITISH AMERICA, the sum of FIFTEEN HUNDRED AND SEVENTY-SIX DOLLARS FIFTY-FIVE CENTS. in United States Gold Currency, for Value Received, as per invoice of 15th ultimo, as advised by

MAGINN & SONS.

Messrs. VALENTINE & ROBINSON, Boston.

In this Bill provision is made for payment in United States Gold Currency; if this were not done,

the Remittee might be paid in Paper Currency, worth so much less than Gold.

£64.

London, 20th Nov. 1867.

Three months after date pay this first of Exchange (second and third unpaid) to the Order of Messrs. RINGER & Co., the sum of SIXTY-FOUR POUNDS STERLING, at the rate of Exchange as per Indorsement, Value Received, and charge the same to

TROWBRIDGE NEPHEWS.

Messrs. MYNHEER & STAATS, Amsterdam.

This Bill is drawn in Sterling, but must be paid in Holland in Florins; the Drawer therefore arranges with the Banker to fix the rate of Exchange *by Indorsement*, which we may suppose to be, for instance, as follows:—

Pay to the Order of Messrs RENDSBURG & Co., at the Exchange of ELEVEN FLORINS NINETY-FIVE CENTS. PER POUND STERLING.

London, 22nd November 1867.

RINGER & Co.

The foregoing Foreign Bills of Class 2 are called *drawn* Bills, being usually negotiated from the Drawer direct to a London Foreign Banker; but where such drafts are made in the Country, and sent up to a correspondent in London, who then negotiates the same with his own Indorsement on them, they are called *made* Bills.

Fs.23,600.

London, 30th Oct. 1867.

On the 30th April next pay this first of Exchange (second and third being unpaid), the sum of TWENTY-THREE THOUSAND SIX HUNDRED FRANCS, Value in Ourselves, and charge the same to account as advised.

Messrs. TAREMIER & Co., Brussels.

J. FRASER.

This Bill is due in six months from the 30th Oct., which is longer than the usual period.

Class 3.

Bills drawn abroad and payable abroad, but negotiated in the United Kingdom, are also *made* Bills.

Examples :—

Fs.14,000.

Bilboa, 1st Nov. 1867.

Sixty days after date please pay this first of Exchange (second and third not paid) to the Order of SALVADOR & PEREZ, the sum of FOURTEEN THOUSAND FRANCS, Value Received, and charge the same to account D. E. & Co.

LORENZO & Co.

Messrs. PASSAVANT FRÈRES, Paris.¹

This Bill, on passing through London, would be negotiated there at a rate of Exchange.

£100.

Zurich, 18th Nov. 1867.

Three days after sight please pay this first of Exchange (second and third not paid) to the AUSTRALIAN BANKING Co., or Order, the sum of ONE HUNDRED POUNDS STERLING, Value Received, as advised.

SCHONBERG & Co.

Messrs. BOULTON, SONS & Co., Melbourne.

This also is a *Foreign Bill*, although drawn on Melbourne. (Even Inland Bills, when sent abroad for negotiation, are, on their return here, looked upon the same as Foreign Bill^s).

Fl.6000.

Hamburg, 10th Nov. 1867.

Three months after date pay this Bill of Exchange to the Order of Messrs. HOMSEN & Co. the sum of SIX THOUSAND FLORINS, Austrian Currency, Value of the same, and place to account, as advised by

To the CREDIT BANK, Vienna.

T. & C. JUNG.

Original Accepted with Messrs. SCHMIDT & Co., where in need.

This is not drawn in a set, by first, second or

third, but is a single Bill. Homsen & Co. send it to Vienna, to Schmidt & Co., who procure Acceptance. Homsen and Co. then make a *Copy* as far as their Indorsement, and send this to London. The Holder of the copy can obtain the *Original Accepted* at Schmidt and Co.'s; which firm may also, in *case of need*, pay the Bill for account of Homsen and Co.

A Bill payable in England on demand or at sight realises the full amount of money which it professes to convey; but a Bill falling due only at a future time is subject to Discount if the Holder wants the money at once. Supposing a Bill drawn for £100—to fall due in three months from this, it will, at a discount of 5 per cent. per annum for interest, equal to £1 5s, be worth to-day only £98 15s.

The same applies to Bills payable abroad; only with these it is usual, instead of deducting Interest in this way, to vary the *rate of Exchange* in accordance with the Interest ruling at the place upon which the Bill is directed.

There are two principal rates of Exchange, viz. :

The *short* Exchange, or sight Exchange rigorously speaking, for Bills *at sight*, but, in practice, applied also to Bills which have only a few days to run; and

The *long* Exchange, or three months Exchange, for Bills having to run fully three months.

The latter rate is the one usually *quoted*; with the ex-

ception of the *short* rates on Paris and Amsterdam, or sixty days sight *usances* on New York, Rio, &c., the London Course of Exchange quotes the three months rates.

With regard to Bills on France, for instance, when the rate of Exchange in London is fs.25·50 per £1 for three months Bills, and Interest in France is 4 per cent. per annum, the short or sight Exchange is only fs.25·25 per £1. If we purchase here three months Bills on France we obtain fs.25·50 per £1; but if we buy sight Bills we get only fs.25·25 per £1. We get more in the first case, but then we have to wait three months; and if we discount the three months Bill in Paris at 4 per cent., to have the money at once, the result is the same as with the short Bill, since fs.25·50 at three months less Interest at 4 per cent. per annum for the three months, equal to 25 centimes, give fs.25·25 per £1, which is the same as for *sight Bills*.

We shall have occasion hereafter to return to the subject of the *short* and *long* Exchanges.

In the foregoing description and discussion of Bills of Exchange we did not intend to give a complete treatise on all the legal and commercial questions connected with the subject; but our principal object has been to show how these mediums of Exchange differ from *Paper Currency*, in reference to the laws, usages, and formalities severally governing the two classes, or applying to them. At the same time we have availed ourselves of the opportunity of giving practical models

which will afford the reader a partial insight into the nature of Inland and Foreign Bills, &c., and teach him the distinctions between the several classes. Foreign Bills are the class which come especially under consideration in this book.

The three descriptions of Mediums of Exchange :—

Metallic Currency	}	Money, and
Paper Currency		
Bills of Exchange		

have each of them their essential characteristics.

Metallic Currency, that is to say, Gold and Silver, in the shape of Coin, is available as value all over the world. Even where the pieces are not available to the full extent of an equivalent of their denominational value they can, at all events, always be sold or melted on the spot for their value in Gold or Silver. Metallic Currency thus has a direct intrinsic and universal public value.

Paper Currency, out of the country where it is used, loses its power of legal tender; and its conversion into value can only be effected through the ordinary channels of Banking or Trading operations; the purchaser being obliged to send it back to the parent country to be exchanged for Metal. Paper Currency thus has an indirect and national public value.

Inland Bills of Exchange effect the transfer and conveyance of such public value from one person or

place to another in the country of their origin, and serve us thus as *Local Mediums of Exchange*.

Foreign Bills of Exchange regulate the transmission of the universal public value from one country to another; this imparts to them the character of *International Mediums of Exchange*.

CHAPTER V.

GOLD.

GOLD is the Noblest of all Metals—the *King of the Metals*, as the Alchemists of old used to call it. It holds this exalted rank by virtue of its precious physical and chemical properties, among which may be mentioned, more especially, its indestructibility (already previously alluded to); its signal power of resisting oxidising influences; its fusibility; its pre-eminent ductility and malleability; its beautiful colour and splendid lustre. You may expose a polished surface of pure Gold to the action of the air or of water for any length of time, and at any temperature; you may place the article in an oven, and heat it short of the fusing point: it will not lose one atom of its substance, and the surface, after removing the deposit of smoke, &c., that may have formed on it, will shine just as brightly as before. It is to all practical intents and purposes proof against the action of the strongest chemicals; you may boil it in hot concentrated Nitric, or Sulphuric, or Muriatic Acid, and it will come out of the ordeal unscathed. It requires the combination of Nitric Acid and Hydrochloric Acid to dissolve Gold; it is the most energetic

of the chemical elements—the *Chlorine* liberated in the process—which acts as the solvent, and the compound resulting is *Terchloride of Gold*. From this salt spring all other compounds which Gold forms with Chlorine, Oxygen, Sulphur, Cyanogen, &c. One of the most remarkable among these compounds is the so-called Fulminating Gold, a formidable explosive agent, which acts with such suddenness and force that the explosion of a small pinch of it on a glass plate will blow a hole through the plate, or shiver it to atoms.

Mercury will dissolve Gold; but, as we have already had occasion to observe, the amalgam formed is simply the result of a mechanical combination. If the quantity of the Gold in the amalgam be gradually increased, a soft yellow mass is formed, which may be rolled into a ball, and the Quicksilver pressed out of it.

The malleability of Gold is almost without limit. Though one of the heaviest metals, its specific gravity being 19·3, Gold can be reduced, by beating with a hammer, to such extreme tenuity that the slightest breath of air will suffice to blow away a sheet of Gold leaf like a feather. Gold leaf can be beaten to the thickness of $\frac{1}{400,000}$ of an inch. It has been calculated that the film of Gold covering some kinds of Silver-gilt wire is so thin that 14 millions of such films could be compressed to the thickness of one inch, whilst 14 millions sheets of common printing paper would reach a height of 45,000 inches, or nearly three quarters of a mile!

A cubic inch of Gold, which weighs about 10 oz.

Troy, might accordingly cover 14 millions of square inches, or about 97,000 square feet; *one grain* actually gilding $20\frac{1}{5}$ *square feet*! This extreme range of the Gilding capacity may be attained by covering a bar of Silver with Gold, and then drawing it into fine wire. A bar of Silver can thus be covered with one ounce of Gold, and drawn into a wire more than 1,300 miles long, when the surface will still appear gilt. By means of electro-gilding also a golden film of scarcely lesser thinness can be laid on Silver; usually, however, the coating is much thicker, six to eight square feet to the grain being the limit. Gold-leaf of the ordinary kind covers about six square feet per grain. Gilding by the old amalgam and fire process gives a still thicker deposit.

One grain of Gold can be drawn into a wire 600 feet long, which then remains scarcely visible.

Another remarkable quality of Gold is its tenacity, which is very considerable, though inferior to that possessed by Iron, Copper, Platinum, and Silver. A Gold wire one-tenth of an inch in diameter will bear a weight of nigh upon 500 pounds, and one 0.078 inch in diameter will support a weight of 150.07 lbs. Avoirdupois without breaking. Gold can be hammered, rolled, and handled almost as easily as Lead, without much effect upon its structure. It can be alloyed with most of the other metals, some of which, however, as, more especially, Tin, Bismuth, Lead, and Antimony, give it a remarkable hardness and brittleness. Gold melts at a temperature of about 2,016 Fahrenheit (32 degrees of Wedgwood's Pyrometer).

Gold has been found, from time immemorial, in many parts of the world. It is always found in the metallic state, partly as native Gold, partly associated with the Ores of other metals. In Europe it is found to the present day in Wales and Cornwall, on the Rhine, in Switzerland, Italy, Hungary, Transylvania, and in the Oural Mountains in Russia; the latter districts, more especially, furnish considerable quantities of this most precious metal. In Asia, there are numerous regions where Gold has been found in abundance in ages gone by. It is undoubtedly still found there; only our information of the exact localities is limited. It is very likely that large deposits of it are hidden in the remote districts now inhabited by roving tribes; the spread of civilisation may bring these stores of mineral wealth to light many years hence.

Africa has always furnished Gold, and still continues to do so; and if the climate and other circumstances should ever permit a population of the European spirit of enterprise to penetrate into the wilds of that Continent, the sources from which the natives at present obtain their comparatively scanty supply might be forced into yielding richer streams of the Precious Metal.

America and Australia now produce the far larger portion of our fresh supplies of Gold. The older countries of the Western World that have furnished, and still continue to yield Gold, are Virginia, North Carolina, and other States of the Union; Mexico; Central America; Brazil, Peru, &c. Nova Scotia and British Columbia also now contribute to our store; but the

collective yield of all these countries together falls far short of that of California, which, from 1849 to the present date, has given from eight to thirteen millions pounds sterling per annum. Australia, whose rich treasures of the Precious Metal were discovered first in 1852, is almost equally productive in Gold as the Western Coast of North America.

The probable exhaustion of these rich Gold fields of the New World, within a more or less remote period, is a matter of serious consideration. To say that these fields are inexhaustible, would be evidently wrong; indeed, the so-called surface diggings have been partially exhausted already. Still the yield, with slight variations, continues at about the same rate, owing chiefly to deeper digging, and Quartz mining operations with improved Machinery; and we believe we are not far out in assuming that for the next fifty or sixty years there will be a pretty constant supply of Gold from these quarters. By the end of that time the Gold deposits existing in the South-Western portion of North America, in Patagonia, and in the yet unexplored regions of Australia, may become available; not to speak of Asia and Africa, whose hidden mineral wealth may be reserved for future ages.

It is a question whether the now more or less exhausted Gold fields of the Old World ever have produced, or whether those likely to be discovered in future in different parts of the earth, ever will produce Gold at so rapid a rate as California and Australia have done severally since 1849 and 1852. It is true that the Sacred Writings speak of large quantities of

Gold in the days of King David and King Solomon ; also that the Spaniards for more than three centuries drew considerable quantities of the Precious Metal from Mexico, Peru, and other sources ; but there is no evidence to show that the Gold-bearing districts of Asia or New Spain were ever so extensive, or were ever worked in so energetic and systematic a manner as the new Gold regions discovered within the last twenty years.

Certain Political Economists, more particularly Michel Chevalier—whose work upon the subject has been translated by Richard Cobden—have endeavoured to prove that Gold has of late been in excessive supply, &c., and that it has accordingly fallen in value. This is a moot point to which we shall have occasion to return hereafter, in a special chapter on the supply, the uses and employment, and the consumption of Gold.

As we have already observed, Gold is always found in the Metallic State. Strictly speaking, then, there are no Gold Ores, though the Gold is often found associated with the Ores of other metals, as Silver, Copper, Tin, Iron, &c. The association here, however, is simply a mechanical one, and the Gold is separated readily enough, according to circumstances, either by the metallurgic processes of roasting, fusion, re-roasting, fusion with Lead, and cupellation ; or, in the case of rich Ores, by direct fusion with Lead, succeeded by Cupellation ; or by the process of amalgamation. To obtain the Gold in a state of purity, the chemical process of Refining must ultimately be had recourse to. The quantities of Gold obtained from this source are

comparatively small. The far greater bulk of this most precious of all metals is obtained as native Gold direct from the soil; or from the auriferous sands of certain rivers.

The various Mining and other processes in general use at the Australian and Californian Gold diggings, and the machinery employed for crushing the auriferous Quartz, and extracting the Metal from the matter with which it is mixed up in the rock; also the form and quality of the Gold dust, according to the different localities in which it is found, are pretty generally known from the accounts and descriptions given of them by travellers.

We will, therefore, confine our remarks here to the outlines of the several methods pursued, and the processes employed for the extraction and gathering of the Precious Metal in the Californian and Australian diggings.

PLACER MINING is the general term applied to the operations practised at the diggings to get the Gold dust out of the soil. The Gold is found imbedded in the earth—in little flat flakes, in small roundish grains, and in nuggets varying from the size of a pea up to lumps of several pounds weight. It often occurs that twenty cart-loads of earth contain but a few shillings worth of Gold, whilst at other times a mere *panful* of soil will yield several pounds worth of the Precious Metal. *Washing* the soil with water is the principal operation in Placer Mining; indeed, without the agency of water

placers would be of comparatively but little value. There are dry Placer Diggings—on the sides of hills, in ravines, in valleys, and in plains; with pits many feet deep, and tunnels many yards long, where Water has to be conveyed by canals and ditches. Some of these waterworks are stupendous enterprises of engineering skill. But there are also many others situated close to rivers, where the miners have free access to water; and others still that are actually in the bed of the river, where there is *too much* water, and where it has to be dammed out to permit profitable working of the auriferous deposit.

WATER then is the great agent employed to wash away from the auriferous soil the earth, stones, and rubbish; the Gold, by reason of its great specific gravity, subsiding to the bottom of the apparatus used in the washing process.

A shallow TIN PAN, called at the diggings a *prospecting* pan, is the most primitive instrument in use there; a few shovelfuls of earth are thrown into this pan, which is then immersed in water, and gently moved about. The contents of the pan are thereby gradually converted into a kind of thick muddy slush, from which the stones are then picked out, and removed by hand, the Gold subsiding meanwhile to the bottom of the pan. As the process of washing goes on, the dirt and sand are gradually washed away, until, at last, there remains only about a pint of thin mud in the pan. The washing is now continued with greater caution, until there remains ultimately only a small quantity of black sand, with glimmering bits of

Gold disseminated through it. Many a panful of supposed auriferous dirt turns out to contain nothing, or only the *colour* of Gold, which is the technical term made use of among the diggers to express that only a few paltry grains of Gold have been found in a large mass of dirt. Where, as will also happen, the washer gets hold of some rich auriferous soil, the moment when the Gold makes its appearance, may be with a nugget or two shining out from amidst, is truly a most exciting one.

Another Gold-washing instrument in use at the diggings is the CRADLE, a double-bottomed box, into which the dirt and water are thrown to be rocked about. The stones are picked out and ejected, the dirt gradually dissolves, the Gold subsiding to the bottom. The pan and the cradle are used where no flowing water can be had.

With a constant supply of flowing water at command, our Californian and Australian Gold seekers use more effective machinery. One of these superior washing apparatus is known as "LONG TOM." This consists of a box, about twenty feet long by two feet wide at the top, and three at the bottom, held in an inclined position. The lower end of the box is made of perforated sheet Iron, and below this is a riffle box, which sometimes contains Quicksilver (the riffle bars which this box contains are made of wood, in the grain of which the fine Gold catches). The water enters at the top; one man throws in the dirt, which is washed by the stream; another picks out the stones and the rubbish, and attends to the proper working of the machine

generally. The Gold is afterwards found at the bottom of the apparatus and in the riffle box.

“Long Tom” has lately been superseded by SLUICES. A sluice is a succession of wooden boxes, each ten to fifteen feet long, to from one to five feet wide, through which a continuous stream of water flows. A number of men work together, according to the number of boxes and the length of the Sluice, which varies from 50 to 1000 feet. The Gold remains at the bottom of the sluice boxes, where it is caught by *false bottoms* or *riffle bars* and other contrivances.

Quicksilver is used very extensively in all Gold mining operations. The larger pieces would be caught without its aid, but the fine particles of Gold—sometimes so fine as to swim on water—would escape, if the Quicksilver did not catch or retain them, through the *Amalgamation* between the two metals. There are several ways of using Quicksilver in this process. It is sometimes thrown in with the dirt, when it will dissolve the Gold on its way through the sluices; or the last washings are made to flow slowly over long Copper plates, coated thickly with Quicksilver; when the fine Gold will adhere to the Quicksilver, the Copper plate becoming encrusted with the amalgam, which is then removed from time to time, and the Copper plate prepared afresh. Every four or five days, the whole sluice is *cleaned up*, *i. e.*, the Gold is taken out which has collected during the time in the crevices and riffle boxes. The wooden sluice boxes can be moved about as occasion requires.

The supply of water is derived either from a

stream, or from water works erected for the purpose by some *Water Company*. In the latter case, a charge of so much per *inch* of water is made, calculated on a peculiar system of measurement. According to the supply furnished, this charge may range from 10s for two men, to £20 per day for a large company of miners working together.

Some of the LARGE SLUICES are paved with stones, and are of course stationary. There are *Tunnel sluices*, *Ground sluices*, and other kind of sluices ; and many little contrivances and appliances are made use of in the sluice-washing system. The chief points of this process, however, have now been sufficiently described. The spade, the wheelbarrow, and the cart, are employed to convey the dirt to the sluices. Tunnelling and blasting also are often resorted to ; in fact, the proceedings generally, in large undertakings, with a great number of men working together, look very much as if railway or sewerage works on a large scale were being carried on there.

But the most prodigious operation in Gold washing is what is called HYDRAULIC MINING. An abundant supply of water is brought down from a considerable height, by powerful pressure, in strong pipe hose, from three to eight inches diameter, and thrown with immense force against the side of an auriferous hill, which is thus, as it were, bodily washed down into the sluices erected for the purpose of receiving these large masses of dirt, and washing the Gold out of them, in much the same way as just now stated. As an auxiliary operation in Hydraulic Mining, Blasts are resorted to,

to tear asunder the earth and rock, and charges of from 10 to 200 barrels of powder are fired at a time. For the eager greed of man for wealth shrinks not from employing the fiercest agencies that fire and water can place at his command to force Mother Earth to yield him her treasures. This gigantic hydraulic process is generally employed on mountainous districts, where water is abundant. A large number of men band together to carry on the operations, as the expenses are great, and the work is a work of time, requiring considerable attention, and a most systematic division of labour.

The Gold which is thus found in the loose ground at the surface, and down to a depth of several hundred feet, was not there originally. We find that the larger or smaller particles of the *Dust*, and even the large heavy *Nuggets*, are more or less rounded off; their original and sometimes fantastic shape has lost its sharpness of outline. This is no doubt due to the action of water, which, aided perhaps by convulsive disturbances of the surface crust of the earth, has, in flowing over the ground washed by it, torn the Gold from its hidden beds, and, in carrying it away to distant parts, has rolled it about for a considerable time; until the metal has ultimately subsided, together with the disintegrated rock and rubble of the floating mass, which constitutes the general deposit through which we find the precious metal disseminated more or less copiously or sparingly.

This Gold came originally from Quartz, found to exist in veins of varying thickness and extent, in the

mountainous and other districts of the auriferous regions. It is evident, from looking at a piece of Gold-bearing Quartz, that the whole mass, at some time or other, must have been in a state of fusion. The Gold lies in streaks and veins, in smaller or larger portions, with jagged ends, between the layers of the stone; filling, in fact, some of the crevices which the accidents of the fusion and subsequent solidification have caused. In some kinds of auriferous Quartz we find the stone intersected by soft veins of earth, and in a porous state; whilst other kinds show a very solid and hard structure. The action of the elements, however, ultimately disintegrates and decomposes the Quartz, gradually reducing the mass to sand; and the Gold originally imbedded in the rock in streaks and veins, and flakes, spangles, and lumps, is washed out and carried away by the water flowing over the ground, which, by rolling it about over considerable distances, and for a long time, wears and rounds it, as just now mentioned, into the shape in which we find it as Gold dust and nuggets.

QUARTZ MINING is now the most general, as it is also the most profitable, way of obtaining Gold.

Very soon after the first explorations of Placer mines, the Gold-bearing veins of Quartz rock were discovered. Some of these crop up at the surface, and *show* the Gold; others lie hundreds of feet below the surface; and all the ordinary contrivances of mining—by pits, shafts, and tunnels—have to be resorted to, to raise the Quartz to the surface. Some of the *rock* is

very rich in Gold, a hammer cleverly and vigorously handled being sufficient to separate the lumps or veins of Gold; the far greater portion, however, is poor in comparison, and in some parts the sharpest eye would be unable to detect the presence of Gold. Yet even these still contain minute quantities of the Precious Metal; and if a ton of 2000 lbs. will yield even *one* ounce of Gold, it pays well to work it out.

When the Quartz has thus been brought to the surface, the Gold seeker has, in the first place, to perform an indispensable preliminary work, which in the Placer mines he finds already done for him by Nature. The stone has to be crushed and pulverized. From the sand thus obtained the Gold is then extracted, by washing with water, on pretty much the same principle as in Placer mining, and by the copious use of Quicksilver.

The CRUSHING MILLS, or QUARTZ MILLS, as they are called, vary greatly in construction. The *Arrastra* of the Mexican settler is the most primitive form. The Quartz is first broken with the hammer into small pieces, which are then thrown into the mill—a round trough, measuring ten to twelve feet in diameter—in which four heavy granite blocks are dragged round by means of an axle driven by a mule.

The modern Californian or Australian mill is a very superior affair. Steam or water power sets in motion mill stones, or heavy iron balls, or sets of stampers. The washing apparatus, the amalgamating contrivances, and all the rest of the elaborate machinery, are of the most approved construction; everything

looks bright and clean and safe, as in some of the best manufactories in England. To see a properly appointed Quartz mill—its working from the first throwing-in of the *rocks* until the heating of the balls of amalgam, to drive out the superfluous Quicksilver—is a most gratifying sight. Many of these Quartz mills are not immediately connected with the working of Quartz veins, but work by the *job*, or crush Quartz for single Miners or Companies, at a certain charge per ton.

Good fortune and bad fortune will, as a matter of course, attend Quartz mining as well as Placer mining. A rich vein may suddenly turn poor, or may altogether cease to yield; whilst a poor vein may suddenly improve, and make the owner's fortune in a short time.

Quartz is evidently the *bed* in which the Gold was originally deposited, as far as we can ascertain at present; and we are pretty safe in taking it for granted that for many years to come, long after the Placer mines shall have been exhausted, the supply from this source will continue pretty steadily. In fact, the steady maintenance of the annual supply from California and Australia, although the Placer mines there have already declined in yield, is due to the increasing extension of Quartz mining operations, which, however, require a large capital to carry them on profitably.

We have thus far shown the reader how the Miner first extracts the Precious Metal from the auriferous soil or the Gold-bearing Quartz. Where it is the produce of direct washing, it appears in the form of Gold

dust, in fine flakes and spangles, and grains like sand, and in small pieces of the size of a pea, and nuggets of larger dimensions, up to lumps weighing several ounces, and even several pounds each. It is heavy, soft native Gold, of a somewhat dull golden lustre. Where the article has been obtained by the amalgamation process, employed both in Placer Mining and Quartz Mining, it appears in the form of lumps, from one to six inches diameter, having a greenish lemon colour; they are hard and brittle, and spongy-looking, which is simply the consequence of the preceding amalgamation of the Gold with Mercury. In both forms this article is marketable, and the owner can get his price for it from the Dealer and Banker at the diggings, within one-half to one per cent. of the actual value, a deduction to which the Miner or Quartz miller may well cheerfully submit. But this Gold is not yet *Bullion* in our sense of the word; its exact value to a penny in a thousand pounds' worth cannot be properly ascertained until it is melted and assayed. These processes, by which we may ascertain to a fraction how much Coin the article will produce, will be described hereafter.

The parcels of Gold dust, &c., or of Amalgam Gold, thus sold to the Dealers and Bankers at the diggings, vary considerably in quality and price, according to the different localities that have furnished them. Some descriptions are worth 80s per ounce, whilst others will only fetch 50s per ounce. We shall hereafter take occasion to show the causes of these differences.

CHAPTER VI.

SILVER.

SILVER ranks next to Gold in the class of Noble Metals, though Platinum and its kindred metals are less liable to alteration, and less subject to the influence of chemical agents. But Silver, on the other hand, possesses many most valuable properties which the metals of the Platinum group lack altogether; moreover, their great scarcity must always prevent their employment for the principal uses and purposes to which Silver is turned.

With the exception of polished Steel, perhaps, Silver is positively the brightest of all metals, its dazzling white brilliancy exceeding even the splendid lustre of Gold, though it must yield to the latter in warmth of colour. A highly-polished surface of Silver will reflect lights and shades with greater effect than the brightest glass mirror.

Although Silver is unalterable in pure air, and not affected by moisture, and refuses to oxidise at any temperature, it is subject more or less to the action of a number of chemical agents that make not the least

impression upon Gold. Silver has a most powerful attraction for Sulphur; it will, therefore, speedily tarnish in an atmosphere containing even the slightest traces only of sulphuretted hydrogen gas, a brown or brownish black film of sulphide forming on its surface, which film, however, protects the Metal from further action of the gas upon it.

Vegetable acids leave Silver entirely unaffected, but Nitric, Sulphuric, and Muriatic acids—especially the two former—dissolve it. Nitric acid will do so even when diluted and in the cold; Sulphuric acid requires the aid of heat to promote its dissolvent action upon the metal. Hydrochloric acid attacks Silver but little.

Silver forms numerous compounds with Oxygen, Chlorine, Iodine, Cyanogen, Sulphur, Mineral Acids, Organic Acids, &c. The well-known lunar Caustic, which is extensively used in Medicine and in Photography, is simply crystallised Nitrate of Silver.

It is its great affinity for other bodies which accounts for Silver being so rarely found in the native state. It is obtained chiefly from Ores.

The specific gravity of Silver is 10·5. It fuses at a temperature of about 1860-1870 degrees Fahrenheit.

Its malleability is very great. It cannot be beaten out so fine as Gold indeed; still, one grain of it can be flattened to cover a space of fifty square inches, or drawn into a wire 130 yards long. Its tenacity is only inferior to that of Iron, Copper, and Platinum; a Silver wire 0·078 inch in diameter will bear a weight of 187·13 Avoirdupois without breaking.

Pure Silver is a little harder than Gold, but still

sufficiently soft to be easily cut with a knife. Silver can be alloyed with most of the other metals, some of which tend to render it more tenacious, whilst others make it exceedingly *brittle* (more especially Tin, Lead, and Mercury).

There are many indications found in the most ancient records of History, pointing to the use of Silver, in the earliest times, for monetary or for ornamental purposes. The Egyptians and the Jews appear to have had plenty of Silver, even at the time of Abraham. The exact localities whence these supplies were drawn are not traceable now ; but in Greece and Syria there are mines known to have been worked long before the Christian Era commenced.

In Europe Silver is found in England and Wales, in Spain, Germany, Hungary, Greece, Sweden, Norway, and Russia ; generally combined with Ores of inferior metals. In Asia we find Persia, India, China, and Siberia producing it. Africa, with the exception of the Northern part, has hitherto furnished but little Silver. The supply from these various sources has been less spasmodic than that of Gold, and continues at a fair rate to this day.

The discovery of America, and the exploration of the Silver Mines of the so-called Spanish American districts, marked a great period in the history of Silver. The Spaniards brought over from New Spain many a ship-load of that Precious Metal, and fabulous are the accounts of the wealth that flowed into the coffers of that nation and of the Portuguese. The Silver Mines

of Peru, Chili, and other parts of South America are still in working, but they furnish at present only moderate quantities of the Metal.

Mexico now holds the first rank for the supply of Silver to the World. The Mexican Mines are exceedingly rich ; their yield was very large, more especially during the last century, when it exceeded occasionally £4,000,000 per annum. The supply declined in the period from 1828 to 1840 ; but it has since then again reached, and even exceeded, the high figures of former times.

Within the last five years Mexico has found a rival in California, and in the new North American State called Nevada. Numerous Silver mines, yielding Ores of great richness have been discovered in these quarters, and from three to four millions sterling worth of Silver have been brought to light annually. The supply from these fresh sources is likely to become very considerable.

Throughout the range of the Rocky Mountains—from British Columbia down to Cape Horn—Silver is known to exist.

Australia also furnishes Silver, and is probably as rich in deposits of it as California has lately turned out to be. This will be made manifest in the next few years.

The processes of Mining for Silver are pretty nearly the same as all other Mining operations. The Ore lies at various depths, and has to be brought to the surface of the ground in much the same way as other minerals. Native Silver Ore occurs occasionally ;

some of the Peruvian Silver, for instance, has been found in that state; and in the different mining localities specimens of the metal are found, in greater or smaller lumps, or in veins and flakes mechanically combined with the Ore. Silver is also often contained in native Gold; also in Copper, Antimony, Lead, and other metals, extracted from Ores by smelting.

The Ores of Silver, from which, as already stated, the greater quantity of the metal is derived, are very numerous. The Sulphide of Silver Ores are the richest. The ruby Silver, which is frequently found in the crystallized state, is the most valuable of these, containing from thirty to sixty per cent of the metal. There are also certain Sulphide Ores found in which the Silver is associated with Gold, Copper, Iron, Zinc, Arsenic, Antimony, Lead, Bismuth. Some Ores are very poor indeed, containing perhaps only one-tenth or one-twentieth per cent. of Silver; yet their *reduction* pays.

A description of the roasting, smelting, and other processes and operations practised to procure the pure Bright Metal cannot well be given here. The subject is too extensive; but ample information may be obtained from the many valuable works specially devoted to it. In Germany, more particularly, the reduction of poor Silver Ores has become a scientific industry of very high standing.

Here the foregoing brief indications will suffice for our purpose, and the reader must imagine himself now in presence of a cake of Silver,—say a jagged piece, measuring about one foot round, and three inches deep

in the centre,—or of rough bars of Silver, about ten inches long, by four wide and four deep, turned out of an iron mould; or of lumps of Chinese *Sycee* Silver, resembling in form and size the shoe of a Chinese lady. These various pieces may all of them be valued in the rough; but remelting, weighing, assaying, and other manipulations are necessary, to convert them into Bullion proper.

CHAPTER VII.

BULLION.

THE term *Bullion*, as applied generally by Bankers and Merchants, is used to denote the Precious Metals, Gold and Silver, in the shape of Blocks, Bars Ingots, Pieces, Coins, or in any other form in which they may be brought into the market to be sold for their intrinsic Metallic Value. Foreign Coins, having no legal currency in the country, come accordingly also under this denomination where they are simply held for sale for what they are intrinsically worth; and so do, strictly speaking, the lawful Coins of the realm. Gold dust and broken-up Jewelry and Plate, intended for the melting pot, belong to the same category. Gold and Silver thread fabrics are sometimes called Bullion, but they have no right to the name in the sense in which we use it. Gold and Silver Ores and Alloys containing only a small proportion of Gold or Silver are not Bullion.

The proper sense and meaning which we attach *here* to the term “Bankers’ Bullion,” excludes even its application to Gold dust, and to broken-up Jewelry and Plate. For, although the worth of such articles can be pretty accurately calculated from their weight

and their known quality, yet to determine their exact Metallic Value correct to a fraction it is indispensable to melt the material, intermix the mass by stirring, then cast it into Ingots, and assay and weigh these.

We accordingly restrict the application of the term Bullion here to Ingots of Gold or Silver of all sizes, and to masses of Gold or Silver Coins, from the quality and weight of which we calculate their value in Pounds, Shillings, and Pence, Francs and Centimes, Dollars and Cents, as the case may be.

Bullion in Bars weighed, assayed, and with an exact statement of its value affixed, is held by the State Banks or Mints, to be manufactured into Coin, whenever necessary.

Bullion is the solid international Medium of Exchange; and the large Exchange transactions arising from the balances of trade between Nations, are settled chiefly by the transmission of uncoined Bullion from the one to the other. It is obvious that Bullion in Bars is the most suitable form for this purpose, and that it is, on the whole, cheaper than Coin, which involves the expenditure of Coinage,—at all events to the Nation issuing it; and which is liable moreover to abrasion, and consequent loss of weight, &c. The Nation receiving the Bullion cares little for the form in which it is sent, so long as it contains a certain quantity of Gold or Silver charged at the value of these materials in the country where the Bullion is received. Therefore, whether we, in England, receive Gold Coins from a Foreign country—which, as they are not current here, we have to melt down into Bars,

to coin Sovereigns of them—or whether we receive Bars of Gold, which realise precisely the same value as the melted Coin, the result is the same to us. The Foreigner, who has to furnish us with a specific amount in Pounds Sterling here, may find it cheaper to send us Bars instead of Coin.

The great bulk of this international Bullion business is consequently carried on by Bullion Bars. The difference of value between Bars and Coin is, however, very small; and, frequently, when the Coins are quite new, they answer just as well as Bullion in Bars. In some countries, also, Bars are occasionally scarce, and Coins must be sent.

The manipulations of melting, weighing, valuing, assaying, refining, and coining Bullion, will be explained hereafter.

From the Weekly Returns published, it appears that the Bank of England generally holds, at present, say £20,000,000 in Bullion. This is all in Gold, chiefly in bright yellow Bars.—(The Bank but rarely holds Silver Bullion).

Twenty Millions Sterling in Gold, if we take the average weight of £1,000 at 21 lbs. Troy, or about $17\frac{1}{2}$ lbs. Avoirdupois, would represent a mass of 350,000 lbs. weight, or 175 tons of 2,000 lbs. each. Taking a four-horse waggon to carry five tons, it would require thirty-five waggons of the kind to cart away the 175 tons of Gold. Supposing each man of them to be able to run away with 100 lbs. weight, or £5,700, it would take 3,500 robbers to carry off the treasure.

A cubic inch of Gold weighs about 10 oz. Troy, and, at an average price of £4, is worth £40. The £20,000,000, therefore, would fill a space of 500,000 cubic inches, or about 290 cubic feet, which is equivalent to a room six feet square by eight feet wide.

A recent estimate values the total amount of Gold now in the hands of man—in Coin, Ornaments, Utensils, and otherwise—at about 1,200 millions Sterling, or 300 millions ounces, or thirty millions cubic inches. This would give a block containing some 17,300 cubic feet, measuring about 26 feet each way, and weighing 10,500 tons of 2,000 lbs. each.

A Bar one inch thick by one inch wide could be made of it two and-a-half millions feet, or 500 miles long. This Bar might be drawn into a wire, more than one-twentieth of an inch thick, 238,000 miles long, which is the calculated distance from the Earth to the Moon; and 0·05 inch diameter is a pretty stout thickness for a wire. One grain of Gold can be drawn out into an almost invisible wire some 600 feet long; one ounce would thus give about 55 miles of wire; and the whole mass, consequently, 16,500 millions miles of wire;—and the distance from Neptune to the Sun is only 2,900 millions miles!

Supposing the £1,200,000,000 to be cast in a single plate one-twentieth of an inch thick, this plate would measure about 4,200,000 square feet; say 2,100 feet long by 2,000 feet wide. Estimating very thin gilding at two millions films per inch thick of Gold, the quantity in the plate would suffice to cover about 420,000 millions square feet, about 15,070 square

miles, or nearly one-fifth of the surface of Great Britain !

The estimates of the total quantity of Silver now in the World vary very much. Some authorities give the total at 500 millions Sterling; others go as high as 2,000 millions. Taking it, at a venture, at about 1,000 millions Sterling, the quantity would be, say 4,000 millions ounces Troy, equal to about 275 millions pounds Avoirdupois, or 137,500 new tons. A cubic inch of Silver weighing about six ounces, the 1,000 millions Sterling would give a block containing some 388,000 cubic feet, say 100 feet square by 39 feet high.

If a Bar were made of this block, one foot square, it would be nearly 74 miles long; at one inch square, its length would be 10,580 miles. A wire made of it, to reach from the Earth to the Sun, a distance of 95 millions miles, would be about 0·013 inch thick. A single grain of Silver, it is stated, can be drawn into a wire 400 feet long; which gives for the ounce a length of more than 36 miles. The whole mass of Silver, then, would give a length of 145,000 millions miles,—more than sufficient to connect the Sun with the Planets, and leave enough and to spare to link the latter together !

These dimensions are truly astounding and almost inconceivable; yet how easily conceivable is the bulk of the material, taken as a solid mass; and how small is this mass compared to the immense bulk of the Earth !

CHAPTER VIII.

MELTING OF GOLD AND SILVER.

ALTHOUGH the melting, or fusion, of the Precious Metals presents no special features requiring a minute description of the process in all its parts, yet a few practical details cannot but prove useful to those who have to deal with Bullion.

The quality of Gold dust and Amalgam Gold is generally known to a comparatively small fraction; still the article has to be melted to be assayed in the mass.

It is the same with Silver; moreover, although this metal is generally sent from the furnace at the Mines in a solid state, in some form or other, it has to be cast into a properly-shaped Bar, to suit the machinery used at the Mint.

Broken-up Gold Jewelry and broken and battered Silver Plate are collected by dealers, who melt the articles when they have a sufficient quantity, and determine the exact value of the Gold or Silver in the Bar or Ingot cast with the Metal. Foreign Coins of variable and doubtful quality, when imported as Bullion, have also to go into the melting-pot. Some Foreign Gold Coins (French, American, Russian, &c.) are known to be always of the same quality, and are

bought by weight, without melting. But where the pieces are intended to be recoined here, they must, of course, also be melted down.

Jewellers and others in the Gold and Silver business, who have to deal only with comparatively inconsiderable quantities of metal, do their melting in small ovens or gas furnaces. But where Bullion has to be melted in masses, for Banking and Minting purposes, the furnaces are built in rows, or ranges, generally against a wall of the building, which carries the flues. The lower portion, reaching to a height of about two-and-a-half feet, projects from the wall, and is formed of an iron casing, enclosing the hearth or pit of the furnace—a square prismatic cavity, lined with fire bricks, from twelve to twenty-four inches wide, by about thirty inches deep. Some six to twelve inches from the bottom of the pit are placed strong, moveable fire bars ; underneath them is the ashpit, with a large opening in front of the casing. The top of the casing carries an horizontal iron ledge, from eight to twelve inches wide, on which the moulds are placed, and whence the melting pot is lifted in and out. From the back of this ledge the casing runs upwards at an angle of forty-five degrees, some fifteen to twenty-five inches high, until it touches the wall carrying the flue. A square opening is made in this piece of the casing, of the same width as the furnace pit, and placed right over it ; through this opening the fire is kept up, and the melting pot inserted. It is closed by a moveable iron shutter, provided with a handle, and running in horizontal grooves.

The crucibles, or melting pots, now in general use are made of Plumbago (Black Lead) ; the best and most durable are manufactured in London. They are of a conical shape, wide at the rim, and narrowing to a flat bottom.

The material to be melted—Gold dust, Coin, Lumps, Bars, or Ingots of Gold or Silver—(of which an account has previously been taken at the Office, and which is sent in to the furnace room accompanied by a ticket giving the marks and the number of the Bars to be produced)—is put into the crucible. Bars or Cakes of Silver requiring remelting, are broken into pieces first with heavy hammers, or with steam hammers and cutters.

The melter then proceeds to throw a shovelful of live coke on the bars of the furnace, and places the charged crucible upon them, covering it with a Plumbago top. He then fills the space around with coke, up to the top, and closes the iron shutter. The strong draft and the roar soon give evidence of the rising fire.

Meantime the melter cleans the iron mould in which the metal is to be cast. For Gold, the moulds are six to ten inches long, by two to three inches wide, and about two inches deep inside ; they are narrower at the bottom, to let the Bar come out easily. The moulds for Silver are larger, measuring from twelve to eighteen inches in length, by four to six inches in width, and six to eight inches in depth. They are also narrower at the bottom, for the same reason as the moulds for Gold.

The moulds must be perfectly clean and dry ; they

are slightly greased inside, and ought to be warm. The melter, standing before the furnace, places the mould on the ledge of it, on his left hand side; he then examines the fire, poking it with an iron rod, or slightly tapping the moveable bars, to clear away cinders, and adds coke, if necessary. With a pair of long tongs, he lifts up the top of the crucible, to see whether the contents are *running*. If he thinks it advisable, he throws in a little flux (borax, &c.) to clear the surface. A rod of Plumbago, about eight inches long and one inch thick, is also thrown on the coke; this is afterwards seized with the tongs, and is used for stirring the molten mass. It must be red hot for this purpose. It is most important to stir the mass properly, to insure an equal quality throughout the Bar, so as to obtain a proper assay.

The heat is very intense at this stage of the melting, sufficiently so indeed to scorch the faces of lookers-on who may be standing four or five feet off. The melter is accustomed to it. To facilitate the handling of the rod, or tongs, close to the fire, he wears on one hand a glove, covered with layers of rags to a thickness of five or six inches. This glove, although damped, is frequently on fire, and requires continual patching.

When the proper moment has come, the pot is lifted out, by means of a large pair of tongs, furnished at the fire end with two concave, or semicircular, jaws, to embrace the curvature of the crucible. These are thrust into the furnace, and the pot is seized around with them a few inches below the rim, and grasped tightly. The man clasps the long end of the tongs

with his protected hand, close to the glowing mass, and slowly and deliberately lifts out the white-hot crucible with the other hand. With only some 200 ounces or so of Gold this is no difficult task ; but it is a very different affair when a weight of some 1,000 or 2,000 ounces of Silver has to be lifted in this fashion, in which case the assistance of another man is generally needed ; a crane is also often used.

Placing the pot on the ledge, a little away from the side of the mould, the melter holds it until another man grasps it sideways with another pair of tongs with concave jaws. With his gloved hand again close to the pot, and the other hand holding the longer end of the instrument, the melter slowly inclines the crucible, and pours the molten mass into the mould, until the last drop is tilted into it.

When the cast is set—though still red-hot—the mould is turned over, the bar tumbles out, and is lifted or dragged away over the iron floor.

The floors of the melting house are made of iron, as an effectual safeguard against the loss of any of the precious metal from spilling, in the event of an accidental cracking or upsetting of a crucible—accidents which will occur occasionally, though rarely.

Nothing can equal the beautiful appearance of a molten mass of Gold or Silver. Looking down into the crucible, the liquid Gold appears floating about at a heat near dazzling whiteness. The prevailing light is that of the heat ; but the eye, after looking at it for some moments, can clearly distinguish the surface of the metal. Now and then its yellow golden nature

will reveal itself by sudden flashes; streaks of prismatic colours seem to travel over it; then bright green will show, even through the intense whiteness of the light. Light blue will be seen, streaked with red; but golden yellow and green are the principal colours that are seen flashing through the white burning rays. When the golden mass is poured into the mould in a stream, the surface at first seems to heave and dance. As the white heat goes down, the coloured lights become more distinct. When the mass has set hard, and is tumbled out—still red-hot—the surface shows changing patches of green and red, which are now and then outshone by the lightning flashes of the metal; a little after this, the Gold coating becomes more distinctly visible; letting the red rays pass through as through a curtain. The red heat gradually loses its intensity, and shortly after, as the red deepens more and more, and fades away, the brilliant golden sides of the Bar or Ingot shine in all their quiet glory. This effect is particularly observable in fine Gold, which always sets bright and pure. With Gold rather largely alloyed with inferior metals, the Bar is apt to get tarnished on the surface, by films of oxide forming on it; steeping in an acid solution will remove this coating, and bring out the Gold.

Molten Silver in fusion looks equally beautiful; blue and violet colours show during the melting, pouring out, and cooling, intersected with Silvery flashes; and the contrast, towards the end of the process, between the dark red and the bright curtain of Silver through which it shines is still more marked than it is with Gold.

When the Bars are cold, they are taken to the stamping room, where a mark and number is impressed upon them.

We shall hereafter have occasion to see what is done with the Bars after they leave the stamping room. As regards our present purpose, we have now brought Gold and Silver to the stage where these Precious Metals, in the shape of saleable Bars, are *Bullion*—in our sense of the word.

Bars occur of all sizes and shapes. The Californian and Australian Bars resemble square bricks and half bricks of various sizes. The ordinary English Bar tapers towards the bottom. As a rule, our English Golden Bars do not exceed 200 ounces in weight; our Silver Bars 1,000 ounces.

The fusion of Bullion is always attended with a small loss of weight, especially where the Alloy is of inferior quality. The lower Metals are apt to suffer partial oxidation in a state of fusion; and overheating the mass will occasionally lead to slight evaporation. The decrease of weight arising from these causes may be from one-twentieth per cent. to one per cent.; but as the loss suffered is chiefly confined to the Alloy, it is not actually so great as it appears, the quality or fineness of the Metal being correspondingly improved thereby.

Particles of Gold and Silver will also occasionally adhere to the melting pot. When the pot has cooled, the inside of it is scraped down, and the Plumbago powder washed away from the Metallic particles, which are then either handed to the owner of the Bar, or

bought of him by the melter by weight for the few shillings they may be worth.

The purer the metal is, the smaller is the loss; fine Gold and fine Silver can only lose weight in cases of excessive heating, when the molten mass gets thrown into agitation, and particles are carried off by the draft of the flue. That this will happen occasionally, has been proved over and over again. When the flues of furnaces which have been in daily use for a number of years are swept, the sweepings are found to contain smaller or larger quantities of Gold and Silver. A story is told of a large melting establishment in Paris where the chimneys, on being cleaned one day, after long-continued use, are stated to have yielded about £6,000 in Gold and Silver! It is also reported that the sweepings of the flues of the San Francisco Mint and the roofs adjoining, on one occasion yielded a clear return of £2,000. We cannot vouch for the truth of these statements. Melters and Refiners are, perhaps, the best authorities as to their probability. Be this as it may, however, the loss incurred amounts at all events only to an imperceptible fraction on the business done. Twenty or thirty furnaces at work every day for ten years may melt, within that time, Bullion to the amount of hundreds of millions sterling. A first-class melting establishment, with its iron floors, ranges of furnaces, and swarthy Welshmen (the melters employed in England are generally Welsh), is a sight well worth seeing. The Chief Melting Establishments in London are those of Messrs. Browne and Wingrove, Wood Street; Messrs. Rothschild, at their Refinery,

Tower Hill; Messrs. Johnson and Mathey, Hatton Garden, &c.

The following are the melting points of some of the principal metals, according to the best authorities on the subject :—

	Degrees of Heat.	
Tin	442	Fahrenheit.
Bismuth . . .	497	„
Lead	612	„
Zinc	773	„
Silver	1873	„
Copper	1996	„
Gold	2016	„
Cast Iron . .	2786	„

Platinum will only fuse before the oxy-hydrogen blow pipe.

The London charges for melting Bullion are : For Gold bars cast of Coin, $\frac{1}{4}$ d per ounce ; cast of Gold dust, $\frac{1}{2}$ d per ounce ; for Silver, 12s 6d for 1,000 ounces, or $\frac{3}{10}$ d per ounce.

CHAPTER IX.

PURE GOLD AND SILVER, AND ALLOYS OF THEM WITH
OTHER METALS.

THE Gold and Silver which we meet with in ordinary life—in the shape of Ingots, Coins, Utensils, Ornaments, &c.—differ considerably in quality and intrinsic value. Many people apply the term *Gold* or *Silver* indiscriminately, and without regard to difference in quality, to all articles made of what is called *good Gold* or *good Silver*. Others, who, better informed upon the subject, know that there are different sorts of Gold and Silver, have recourse to certain trials or tests, to ascertain the true quality of the metal. This is the business, more especially, of Jewellers and Goldsmiths. Bankers and Bullion dealers, and the Masters and Managers of State Mints, have to examine the Precious Metals submitted to them still more closely and accurately, and to determine their true value to the minutest fraction.

Absolutely pure Gold and Silver are elementary bodies, belonging to the domain of Chemistry, which cannot possibly present the least difference in quality, from whatever source they may have been derived, and by whatever process they may have been brought to a

state of absolute purity. Take Gold dust or nuggets from California, Australia, or the Oural mountains, or from any other part of the Globe where the article is to be found; take Golden Coins of any sort, or broken Jewelry, and extract from these different articles severally the pure metal, by the chemical process of Refining (which will be described hereafter), and you will be unable to detect the slightest difference between the produce obtained from the different sources. You will find that all the samples present identically the same properties. It is the same with Silver.

When the scientific chemist speaks of the elementary bodies—Gold and Silver—he refers invariably to the absolutely pure Metal. A *Sovereign*, for instance, which is *Gold* to us, is not *pure* Gold in the chemical sense of the word. *Pure* Gold is not suitable for Coin; it is too soft, and too much liable to loss from wear by friction. It is, therefore, customary to impart to it greater hardness and more power to resist friction (to which money is continually subject), by fusing it together with certain proportions of other and harder metals; or, as it is technically called, by *Alloying* it. When thus *mixed* or *Alloyed*, it is, as a matter of course, no longer *pure* Gold. In analysing a Gold Pound Sterling, we find, for instance, that divided into twenty-four equal parts by weight, twenty-two of these fractions consist of *pure* Gold, and the remaining two of Copper or Alloy. Accordingly, one-twelfth part of the Coin is *not* Gold.

French 20-franc Gold Pieces contain eighteen

parts of Gold and two parts of *Alloy*—or nine-tenths and one-tenth respectively. These proportions are found to give the requisite hardness.

Articles of Jewelry generally contain much less Gold than Gold coins. Wedding rings, however, are frequently made of *Sovereign* (i.e., *standard* or twenty-two carat) Gold. Watch cases and chains of the best description are made of eighteen carat Gold—that is to say, eighteen parts are Gold, six are Alloy. Then there is sixteen carat (sixteen Gold, eight Alloy), fourteen carat (fourteen Gold, ten Alloy), twelve carat, and even eight carat Gold. This latter compound, which thus contains only eight parts of the Precious Metal, to sixteen of Alloy, scarcely deserves the name of Gold. In fact, where the proportion of Gold is less than one-half, or twelve carats, the article ought not to be called *Gold*. Some Jewellers manage the colour of their Alloys so cleverly, that the baser descriptions of their goods closely resemble the best Gold; by subjecting the surface of the articles made to the action of acids and burnishing tools, or by actually gilding them over, they make the outside appear as good as fine Gold.

The prices of articles of Jewelry, even when made of the best Gold, and *Hall*-marked to prove the quality, are more dependent on the fashion and the workmanship than on the intrinsic value of the metal which they contain; as the possessors are apt to find out when offering them for sale, with a confused notion that they ought to fetch something very near the price paid for them.

Pure *Silver* is also too soft for ordinary uses, and requires alloying with other metals in pretty much the same manner as Gold.

Now, where does the *pure* Gold come from? Is the metal ever obtained in a state of purity in California, or in Australia, or in any other of the Gold-producing regions? To this question, a reply must be given in the negative. True, we hear Californian and Australian Gold dust and nuggets sometimes qualified as *virgin* Gold; but if the word *virgin* is meant here to stand for *pure*, it is decidedly a misnomer.

We have already described how the Gold is worked out from the Mines and Diggings. We may, therefore, at once proceed to inquire here into the respective quality and value of the different descriptions of the metal as found in the Gold-bearing districts. There we find that the various sorts of the native Metal coming from the Mines or Diggings differ just about as much in quality as Gold Coin and Jewelry do. The Gold is, in fact, generally found alloyed or associated with other metals, more especially with Silver; but also with Platinum, Iridium, Iron, Antimony, &c.

The Australian Gold dust is the purest. In some localities it is found to contain as much as ninety-nine per cent. of Gold to one of Silver; in others eighty per cent. of Gold to twenty of Silver.

Californian native Gold contains from ninety-six per cent. down to seventy per cent. of pure metal. South American from eighty-five per cent. down to sixty per cent.

We believe a few specimens of pure native Gold have been found in Wales; but the quantities of these are infinitesimally small compared to the vast bulk of the Metal obtained in other parts of the World. As a matter of course, the value by weight of the several descriptions differs in proportion to the per centage of pure Gold respectively contained in them.

Silver, in the metallic state, supplied from the Mine, or the smelting furnace, is also more or less largely associated with other metals, such as Lead, Tin, Copper, Iron, &c.; also occasionally with small proportions of Gold.

We have then to look upon *pure* Gold and Silver simply as elementary bodies that can be obtained only by chemical agencies from the native Metals, or their Alloys and Compounds. And some people will even maintain that there is no such thing in actual existence as chemically pure Gold or Silver, the Precious Metal always retaining some minute trace of impurity, however repeatedly and carefully it may have been refined. Be this as it may, the purity or fineness of the Gold we have to deal with is sufficiently absolute for all practical intents and purposes, even where the impurity in the article exceeds one in ten thousand parts.

In commerce we say *fine* in lieu of *pure*; when we speak commercially of *fine* Gold or Silver, we mean metal of the highest degree of purity attainable by the best processes of refining, and sufficiently pure, at least, for all practical purposes.

The reader will please to bear this definition in

mind, as all our valuations of the Precious Metals and their Alloys have reference to the term *fineness*, as used in the acceptation here defined.

We will now give the per centage composition of a few varieties of native Gold:—

SPECIMENS

FROM CENTRAL AMERICA.				
Gold	. 88·24	87·94	73·38	62·42
Silver	. 11·76	12·06	26·62	37·58
	<u>100·00</u>	<u>100·00</u>	<u>100·00</u>	<u>100·00</u>

FROM PERU, CHILI, &c.				
Gold	. 81·26	59·72	74·00	91·33
Silver	. 18·74	40·28	26·00	8·67
	<u>100·00</u>	<u>100·00</u>	<u>100·00</u>	<u>100·00</u>

FROM THE BRAZILS.		FROM AFRICA.	
Gold	 93·00	Gold	 98·03
Silver	 6·75	Silver	 1·69
Other impurities	0·25	Iron	 0·28
	<u>100·00</u>		<u>100·00</u>

FROM THE OURAL AND SIBERIA.			
Gold	 97·25	Gold	 90·37
Silver	 2·18	Silver	 9·10
Copper	 0·40	Copper	 0·07
Iron	 0·17	Other impurities	0·46
	<u>100·00</u>		<u>100·00</u>

FROM CALIFORNIA.			
Gold	 96·14	Gold	 90·35
Silver	 3·86	Silver	 8·80
		Iron	 0·05
		Silica	 0·80
	<u>100·00</u>		<u>100·00</u>

FROM CALIFORNIA.

Gold. . . .	86·85	Gold. . . .	77·40
Silver . . .	3·05	Silver . . .	22·05
Oxide of Iron .	0·10	Other impurities	0·55
	100·00		100·00

FROM AUSTRALIA.

Gold	99·50	96·32	94·13	90·05
Silver	0·50	3·68	5·87	9·95
	100·00	100·00	100·00	100·00
Gold.	95·78	Gold.	88·64	
Silver	3·90	Silver	11·30	
Iron	0·22	Iron	0·06	
Other impurities	0·10			
	100·00			100·00

Some samples of Native Silver have been found composed of—

Silver	93·00
Copper	2·13
Lead	1·60
Arsenic	1·40
Zinc	1·00
Iron	0·50
Antimony . . .	0·10
Other impurities .	0·27
	100·00

Among the native metallic compounds or Ores of Silver may be mentioned, more especially:—Antimonial Silver, which contains about seventy-five to eighty-five per cent. of Silver, to from fifteen to twenty-five of Antimony; Arsenial, or Mixed Antimonial Silver,

which contains about fifteen or sixteen per cent. of Silver, to thirty-five of Arsenic, forty-four of Iron, and four of Antimony; Tellurial Silver, with about sixty per cent. Silver; Silver Amalgam, which contains about thirty-five per cent. Silver, and sixty-five of Quicksilver.

The Silver obtained by smelting Silver Ores often contains, as has already been stated,—Gold, Copper, Lead, Antimony, Bismuth, and a variety of other impurities.

CHAPTER X.

TESTING AND ASSAYING BULLION.

THE Metals with which Bullion and Coinage Gold is generally found *Alloyed* are Silver and Copper. Silver is the natural Alloy; Copper is melted with the Gold by the Mints, as it is a harder metal, and renders the Gold more suitable for the purpose of Coinage.

Pure Gold is of a peculiar bright yellow colour; its alloyage with Silver gives it a paler greenish tint. Copper deepens and reddens the natural colour of the Gold with which it is Alloyed. Gold intended for Jewelry and Plate is Alloyed with Tin, Aluminium, &c.; but for Bullion proper and Coinage Gold the only two Alloys coming under our notice here are Silver and Copper.

Silver may be *Alloyed* also with other white Metals; but the only Alloy used for Coinage Silver is Copper. The usual proportion of this latter metal contained in Mint Silver does not affect the white colour of the Silver in any perceptible degree.

Now let us suppose that we have before us a Bar of Gold, say of about 200 ounces weight—in shape somewhat like a large cake of chocolate—and we want to know its exact value. The first thing to be done,

is to weigh the Bar accurately to a grain, after this its fineness has to be ascertained, and from the data thus obtained, we have to determine the exact intrinsic value of the Bar to a fraction. The specific weight and the colour of the article show that it is Gold; for confirmation we resort to the application of a simple chemical test: we scrape the surface of the Bar, and apply strong Nitric Acid to it. The fact that no discoloration takes place is a proof that the Metal is Gold. The colour may be nearly like that of pure Gold, or it may look a little pale, showing the presence of Silver; or it may look a little reddish, indicating the presence of Copper; or both shades may be apparent to the practised eye.

If we are certain that the only Alloy in the piece is Silver or Copper, we may make a kind of rough Assay by specific gravity simply. The Bar is weighed for that purpose, first in the ordinary way, then in distilled water. From the specific weight thus ascertained, we calculate the respective quantities of Gold and Silver (or Copper) in it.

From the great difference between the specific gravity of Gold and that of Silver and Copper, a rough estimate of this kind is practicable for Gold alloyed with Silver or with Copper, although even the result may be inaccurate to the extent perhaps of several per cent. But where we have to deal with the presence of both Silver and Copper, a rough estimate by this simple means is impracticable, as there is no very great difference between the specific gravity of the one Metal and the other (Silver 10·5=Copper 8·9). Where

we do not know whether either of these Alloys is present, the intrinsic value of the Bar cannot be estimated in this fashion; nor will it answer for small quantities.

The most ancient *Test* known is the so-called *Touchstone*, a hard black basalt stone,* with a rough surface, which is not affected by acids, and on which Gold, rubbed upon it, leaves a distinct mark or stroke. The Touchstone is a few inches long. A broad stroke, one to two inches long, is made upon it with a part of the piece of metal to be tried. The stroke is then wetted with a few drops of Nitric Acid, and the effect is carefully observed. If the line remains entirely unchanged, looking quite as full and golden as before—and if the Acid drained off the stone looks as clear as before—the Gold may be taken to be very pure. But if the line appears impaired in brilliancy, showing minute breaks here and there over its surface—and if the Acid drained off the stone shows a black tint (indicating the formation of Nitrate of Silver), or a greenish tint (indicating the formation of Nitrate of Copper); or if it shows both a black and a greenish tint, there can remain no doubt but that the Gold is impure, being alloyed with Silver, or with Copper, or with both. The *degree* of impurity is measured by the extent to which the fine Golden line on the Stone is affected, and by the relative intensity of the discoloration of the Acid.

The operation is greatly facilitated by the use of a set of small Golden Bars or Needles (called *Touch-*

* Black flint slate will answer the same purpose.

needles) of known composition, varying in fineness from pure Gold, $23\frac{1}{2}$ carat Gold, &c., down to the lowest sort. The tester selects those which, in his judgment, are of about the same quality as the piece of Metal to be tested, and he makes strokes with them on the Stone, alongside the stroke made by the article under examination. The action of the Acid upon the different strokes enables him to judge of the comparative degree of fineness of the latter.

It is said that the Bullion merchants in the Indian Bazaars are the greatest adepts in this method of testing Gold, seldom failing to ascertain to within one-half per cent. the exact value of the article tested. In Europe Jewellers and others use the Touchstone only for the very widest tests—generally, merely to ascertain whether a certain Coin or Ornament is Gold; but for Bullion operations, in which an exact valuation to $\frac{1}{1,000}$ th part is required, it is of no use.

Silver cannot be tested by the Touch Stone. The surface of a supposed piece of Silver may be tested by applying a drop of Nitric Acid to it; if the Acid turns black on exposure to light the surface is Silver; if it turns green, or grey, or white, with evolutions of minute bubbles of air, it is not Silver. Where articles are merely plated with Silver, the part to be examined must first be scratched or filed before the Acid is applied.

These primitive modes of trying the fineness of the Precious Metal in Gold or Silver articles, do not give results sufficiently accurate for business purposes. In Bullion and Coinage operations we have to determine the quality of the Gold or Silver Bars

to the minutest fraction ; this we effect by *Assaying* the Bar. The business of making Assays is now conducted by special *Assay Offices*, where the operators have all the necessary apparatus at their command, to ascertain the precise quality of a Bar from a sample piece sent to them for Assay. These Assay Offices form a special branch of industry in connection with the Bullion business. All that the Bullion dealer has to do is to cut off a piece from the Bar he wishes to have Assayed, and to forward it to the *Assayer*, who, after operating upon it, will return the same, with an exact statement of the *fineness* of the Metal. The charge for making these Assays varies from one to five shillings, according to the nature of the Assay—whether it is for Silver or for Gold, or whether it is a single, a double, or a treble Assay.

A small piece the size (though not the shape) of a pea is, with a chisel and hammer, chipped off the Bar of Gold to be Assayed, which has a letter and number stamped upon it. Gold is a soft metal, which easily yields to sharp steel. The chip is sent to the Assayer, folded up in a piece of paper, about eight inches long by three wide, which has marked upon it at the top, in writing, the letter and number of the Bar. The Assayer returns the paper in due time, with the report of the *Assay* written upon it, showing the exact quality of the Bar. The Assay piece is returned folded up in the paper, not in the same state, of course, in which it was sent, but cut up, and some of it rolled into strips, showing thereby that the article has been subjected to the Nitric Acid process.

Although the pieces Assayed are comparatively so small, so minute and certain are the manipulations, and the scales employed by the Assayer so delicate, that mistakes very rarely occur. Still, double or treble Assays are frequently made for greater safety, or a second Assayer is employed, to ensure an efficient check upon the operation.

It is, of course, absolutely indispensable that the Bar to be assayed should be properly and uniformly melted, so as to ensure the same composition throughout. Otherwise it might chance to differ in fineness in different parts of its mass. Frauds might also be committed by dishonest parties; the interior of the Bar might be Iron, or some other inferior metal, with the Gold or Silver cast around it. Bullion dealers know well how to guard against such contingencies. The Bank of England, for instance, will not buy Gold Bars unless melted, or re-melted, by melting houses specially employed by that establishment. The seller accordingly takes his Gold there to have it melted and cast into a certain shape (Bank of England shape, as it is called), and stamped with the Bank melter's mark, which serves as a guarantee that the Bar is really what it purports to be.

There are certain English, French, Australian, Californian, and other foreign melters, whose stamp is known, by experience, to be equally safe; and between dealers who know each other, purchases and sales are sometimes made on the faith of the same.

Persons not acquainted with this business are apt to imagine that many ingenious frauds might be com-

mitted in it ; but, upon the whole, the business is pretty safe from attempts of this nature, in so far as the Bullion dealers are concerned : for their number is not so large but that they can easily control each other ; and, as a matter of course, the very nature of their occupation makes them careful.

The art of *Assaying*, as now practised by Assayers of Gold and Silver Bullion, is a triumph of chemical science. Valuable works have been written on this subject. In a subsequent chapter, after we shall have prepared the way for an easier understanding of the matter, by a description of the Process of *Refining*, we will endeavour to give the outlines of the methods of *Assaying* in general use.

CHAPTER XI.

METHODS OF EXPRESSING AND REPORTING THE FINENESS OF
BULLION.

THE manner in which the ascertained *fineness* of Bullion is reported is not universally the same.

There are two principal systems in vogue—one, the English and German Carat system; the other, the modern French and American Decimal system. The latter is the better and easier of the two, as arithmeticians well know.

The *Carat* is an old-fashioned weight derived, in olden times, from the average weight of a certain description of beans, but entirely out of use at present, except for Diamonds. (Six carats are equal to nineteen grains Troy weight.)

We do not *weigh* Gold by the Carat, but the *Assayer* reports the fineness of the Gold examined by him in Carats. The Carat serves as the *Integer* or *Unit*; it is divided into four grains, subdivided again into fractions of one-eighth each. In fact, the Gold *Carat* is simply a nominal weight.*

* In Hamburg the Assay weight for Gold is the Mark divided into 24 carats of 12 grains each, with fractions of $\frac{1}{4}$ grain. For Silver, it is the mark divided into 16 loths of 18 grains each, with

A piece of Gold reported by the Assayer as twenty-four Carats fine is *pure* or *fine* Gold. There can be no Gold twenty-five carats fine, then, as twenty-four is the utmost possible degree of fineness. Supposing the Assayed piece to weigh 120 grains, the report that it is twenty-four Carats fine means that it contains exactly 120 grains of pure Gold. If a piece is found to contain 115 grains of Gold and 5 of Alloy (Copper or Silver), it is 23 carats fine; if it contains only 60 grains of Gold and 60 of Alloy, it is 12 carats fine.

If it contains $102\frac{1}{2}$ grains of Gold in the 120 grains of weight, it is 20 carats and 2 grains fine (the carat being divided into four grains). If $104\frac{11}{16}$ grains, it is 20 carats $3\frac{3}{4}$ grains fine.

Now this seems simple enough; but the British Bullion authorities have complicated the business by having the value reported as *below* or *above Standard*. The British *Standard* metal (of which Sovereigns are coined), is 22 carats fine; that is to say, a piece of 24 ounces must contain exactly 22 ounces of Gold (equal to 11 in 12, or 22 in 24), to be reported as—

British Standard, of 22 carats pure Gold, with 2 carats of Alloy.

A piece 23 carats fine is, accordingly—

1 carat better than Standard, and the Assay is reported—

(Better).—B 1 carat 0 gr.

fractions of $\frac{1}{2}$ grain. The Spanish Assay Mark is 24 quinquates of 4 grains and fractions for Gold, and 12 dineros of 24 grains and fractions for Silver.

A piece 21 carats fine is reported—

(Worse).—W 1 carat 0 gr.

One 22 carats $2\frac{7}{8}$ grains fine is reported—

B 0 carat $2\frac{7}{8}$ grains.

One 18 carats $2\frac{1}{4}$ grains fine, is reported—

W 3 carats $1\frac{3}{4}$ gr.

To reduce this to the simpler form of the report in carats, 22 carats are added to the report in the case of Better; as *e.g.*:

B 0 carat $2\frac{7}{8}$ grains

Add 22 carats

Fine 22 carats $2\frac{7}{8}$ grains

In the case of Worse the report is subtracted from 22 carats; as *e. g.*:

22 carats standard

Subtract Worse 3 „ $1\frac{3}{4}$ gr.

Fine . . . 18 „ $2\frac{1}{4}$ grains

This is the so-called *Standard system of British Reports for Assays of Gold*.

In the *British Assays for Silver*, the Unit or Integer (instead of the carat and its grains as for Gold) is the dwt. (pennyweight), with its fractions of one-fourth.

Fine or pure Silver is 240 dwts. (12 ounces of 20 dwts. each; the

Standard Metal for Sterling Silver is 222 pure Silver, 18 Alloy.

Consequently, *fine* or 240 dwts. Silver is Better (B) 18 dwts.; and

Silver of 216 fineness is Worse (W) 6 dwts.

Add to the Better the 222 for Standard, or deduct the Worse from the same, and you will get the 240 in the one, and the 216 in the other case.

This method of reporting Betterness (Better than Standard), or Worseness (Worse than Standard), is, indeed, easily understood with a very little practice; still it is, for all that, but a clumsy system, without the slightest pretence to ingenuity.

The Decimal system, such as it is used in France and some other countries, is far more logical and convenient. Instead of taking for its basis the 24 carats for Gold (which, with the carat divided into four grains, and the grain subdivided into eight fractions, or half-quarter grains, gives 768 ultimate parts), or the 240 dwts. for Silver (which, with the dwt. divided into quarter-pennyweights, gives 960 ultimate parts), the Decimal system starts both for Gold and Silver with 1000 for its highest figure.

A Bar of Gold of 1000 ounces containing 950 ounces pure Gold is called 950 fine. A Bar of 500 ounces reported 950 fine contains accordingly 475 ounces pure Gold, &c.

A Bar of Silver of 1000 ounces containing 800 ounces pure metal is called 800 fine. A Bar of 150 ounces reported 990 fine contains $148\frac{1}{2}$ ounces of pure Silver.

We call this Decimal method the *Millièmes* (thousandth-parts) system.

British reports are easily converted into Millièmes reports :

If 24 Carats fine is equal to 1,000 Millièmes fine, what is British Standard of 22 Carats in Millièmes ?

$$24 : 1000 :: 22$$

$$24 \overline{) 22000} (916 \cdot 6$$

$$\underline{216}$$

$$40$$

$$\underline{24}$$

$$\underline{160}$$

$$\underline{144}$$

$$160$$

$$\underline{144}$$

$$16, \text{ \&c.}$$

or $916\frac{2}{3}$ Millièmes. It is generally reported 917, which is near enough for the purpose of ordinary estimates.

Again, what is 900 fine in Millièmes in British Reports ?

$$1.000 : 900 :: 24$$

$$\underline{900}$$

$$21 \cdot 6 \text{ carats.}$$

$$\text{Or } 21 \text{ carats } 2\frac{3}{8}.$$

$$\text{Or } 20 \text{ carats } 1\frac{5}{8}.$$

(As we reckon in British Reports by fractions of one-eighth, $\frac{5}{8}$ is substituted for $\frac{3}{8}$, which is sufficiently near enough for the purpose.)

The British Standard for Silver of 222 fine is, in Millièmes—

$$240 : 1000 :: 222$$

$$240)222000(925$$

$$\underline{2160}$$

$$\underline{.600}$$

$$\underline{480}$$

$$\underline{1200}$$

$$\underline{1200}$$

Whilst 900 fine in Millièmes is equal to—

$$1000 : 900 :: 240$$

$$\underline{900}$$

$$216 \text{ dwts. or}$$

6 dwts. worse than Standard.

The reader should make himself familiar with these Reports,—both with the British, as expressed by *Betterness* or *Worseness* than British Standard (22 carats for Gold, 222 pennyweights for Silver); and with the more convenient method of Reports in Millièmes.

The subjoined comparative Tables of British and French Reports show the British equivalents, upon the Better or Worse Report system, for French Millièmes, from 1000 fine French=24 carats fine, or Better 2 carats 0 gr. British, to 800 fine French=19 carats $0\frac{3}{4}$ gr. fine, or Worse 2 carats $3\frac{1}{4}$ grs. British, for Gold; and from 1,000 fine French=240 dwts., or Better 18 dwts. British, to 800 fine French=192 dwts., or Worse 30 dwts. British, for Silver.

COMPARATIVE TABLE OF BRITISH AND FRENCH REPO.

GOLD.

N.B.—B stands for *Better* than Standard, W for *Worse* than Standard.

B	In	B	In		In	W	In	W	In
Car. Gr.	Mills.	Car. Gr.	Mills.	Car. Gr.	Mills.	Car. Gr.	Mills.	Car. Gr.	Mills.
2 0	1000	0 3 7	958			0 3 7	881	1 3 7	840
1 3 7	999	0 3 7	957	ENGLISH.		0 3 7	880	1 3 7	839
1 3 7	998	0 3 7	956	0 0	917	0 3 7	879	1 3 7	838
1 3 7	997	0 3 7	955	STANDARD.		0 3 7	878	1 3 7	837
1 3 7	996	0 3 7	954	W		0 3 7	877	1 3 7	836
1 3 7	995	0 3 7	953	0 0 1	916	1 0	876	1 3 7	835
1 3 7	994	0 3 7	952	0 0	915	1 0	875	2 0	834
1 3 7	993	0 3 7	951	0 0	914	1 0	874	2 0	833
1 3 7	992	0 3 7	950	0 0	913	1 0	873	2 0	832
1 3 7	991	0 3	949	0 0	912	1 0	872	2 0	831
1 3	990	0 3	948	0 0	911	1 0	871	2 0	830
1 2 7	989	0 2 7	947	0 0	910	1 0	870	2 0	829
1 2 7	988	0 2 7	946	0 0	909	1 0	869	2 0	828
1 2 7	987	0 2 7	945	0 0	908	1 0	868	2 0	827
1 2 7	986	0 2 7	944	0 1	907	1 0	867	2 0	826
1 2 7	985	0 2 7	943	0 1 1	906	1 0	866	2 0	825
1 2 7	984	0 2 7	942	0 1	905	1 1	865	2 1	824
1 2 7	983	0 2 7	941	0 1	904	1 1	864	2 1	823
1 2 7	982	0 2 7	940	0 1	903	1 1	863	2 1	822
1 2 7	981	0 2 7	939	0 1	902	1 1	862	2 1	821
1 2	980	0 2	938	0 1	901	1 1	861	2 1	820
1 1 7	979	0 1 7	937	FRENCH		1 1	860	2 1	819
1 1 7	978	0 1 7	936	0 1 7	900	1 1	859	2 1	818
1 1 7	977	0 1 7	935	STANDARD.		1 1	858	2 1	817
1 1 7	976	0 1 7	934	0 1 7	899	1 1	857	2 1	816
1 1 7	975	0 1 7	933	0 1 7	898	1 1	856	2 1	815
1 1 7	974	0 1 7	932	0 2	897	1 2	855	2 1	814
1 1 7	973	0 1 7	931	0 2	896	1 2	854	2 2	813
1 1 7	972	0 1 7	930	0 2 1	895	1 2	853	2 2 1	812
1 1 7	971	0 1 7	929	0 2 1	894	1 2	852	2 2 1	811
1 1	970	0 1	928	0 2 1	893	1 2	851	2 2 1	810
1 1	969	0 0 7	927	0 2 1	892	1 2	850	2 2 3	809
1 0 7	968	0 0 7	926	0 2 1	891	1 2	849	2 2 3	808
1 0 7	967	0 0 7	925	0 2	890	1 2	848	2 2 3	807
1 0 7	966	0 0 7	924	0 2	889	1 2	847	2 2 3	806
1 0 7	965	0 0 7	923	0 2	888	1 2	846	2 2 3	805
1 0 7	964	0 0 7	922	0 2	887	1 3	845	2 2 3	804
1 0 7	963	0 0 7	921	0 3	886	1 3	844	2 3	803
1 0 7	962	0 0 7	920	0 3 1	885	1 3 1	843	2 3	802
1 0 7	961	0 0 7	919	0 3 1	884	1 3 1	842	2 3 1	801
1 0	960	0 0	918	0 3	883	1 3	841	2 3	800
1 0	959			0 3	882				

COMPARATIVE TABLE OF BRITISH AND FRENCH REPORTS.

SILVER.

N.B.—B stands for *Better* than Standard, W for *Worse* than Standard.

B	In	B	In	W	In	W	In	W	In
Dwts.	Mills.	Dwts.	Mills.	Dwts.	Mills.	Dwts.	Mills.	Dwts.	Mills.
18	1000	7 $\frac{3}{4}$	958	1 $\frac{1}{4}$	920	10 $\frac{3}{4}$	881	20 $\frac{3}{4}$	839
17 $\frac{3}{4}$	999	7 $\frac{1}{2}$	957	1 $\frac{1}{2}$	919	11	880	21	838
17 $\frac{1}{2}$	998	7 $\frac{1}{4}$	956	1 $\frac{3}{4}$	918	11 $\frac{1}{4}$	879	21 $\frac{1}{4}$	837
17 $\frac{1}{4}$	997	7	955	2	917	11 $\frac{1}{2}$	878	21 $\frac{1}{2}$	836
17	996	6 $\frac{3}{4}$	954	2 $\frac{1}{4}$	916	11 $\frac{3}{4}$	877	21 $\frac{3}{4}$	835
16 $\frac{3}{4}$	995	6 $\frac{1}{2}$	953	2 $\frac{1}{2}$	915	12	876	22	834
16 $\frac{1}{2}$	994	6 $\frac{1}{4}$	952	2 $\frac{3}{4}$	914	12	875	22 $\frac{1}{4}$	833
16 $\frac{1}{4}$	993	6	951	3	913	12 $\frac{1}{4}$	874	22 $\frac{1}{2}$	832
16	992	6	950	3 $\frac{1}{2}$	912	12 $\frac{1}{2}$	873	22 $\frac{3}{4}$	831
15 $\frac{3}{4}$	991	5 $\frac{3}{4}$	949	3 $\frac{1}{4}$	911	12 $\frac{3}{4}$	872	23	830
15 $\frac{1}{2}$	990	5 $\frac{1}{2}$	948	3 $\frac{3}{4}$	910	13	871	23 $\frac{1}{4}$	829
15 $\frac{1}{4}$	989	5 $\frac{1}{4}$	947	4	909	13 $\frac{1}{4}$	870	23 $\frac{1}{2}$	828
15	988	5	946	4 $\frac{1}{4}$	908	13 $\frac{1}{2}$	869	23 $\frac{3}{4}$	827
14 $\frac{3}{4}$	987	4 $\frac{3}{4}$	945	4 $\frac{1}{2}$	907	13 $\frac{3}{4}$	868	24	826
14 $\frac{1}{2}$	986	4 $\frac{1}{2}$	944	4 $\frac{3}{4}$	906	14	867	24	825
14 $\frac{1}{4}$	985	4 $\frac{1}{4}$	943	5	905	14 $\frac{1}{4}$	866	24 $\frac{1}{4}$	824
14	984	4	942	5 $\frac{1}{4}$	904	14 $\frac{1}{2}$	865	24 $\frac{1}{2}$	823
13 $\frac{3}{4}$	983	3 $\frac{3}{4}$	941	5 $\frac{1}{2}$	903	14 $\frac{3}{4}$	864	24 $\frac{3}{4}$	822
13 $\frac{1}{2}$	982	3 $\frac{1}{2}$	940	5 $\frac{3}{4}$	902	15	863	25	821
13 $\frac{1}{4}$	981	3 $\frac{1}{4}$	939	6	901	15 $\frac{1}{4}$	862	25 $\frac{1}{4}$	820
13	980	3	938	FRENCH 6 900		15 $\frac{1}{2}$	861	25 $\frac{1}{2}$	819
12 $\frac{3}{4}$	979	2 $\frac{3}{4}$	937			15 $\frac{3}{4}$	860	25 $\frac{3}{4}$	818
12 $\frac{1}{2}$	978	2 $\frac{1}{2}$	936	STANDARD.		16	859	26	817
12 $\frac{1}{4}$	977	2 $\frac{1}{4}$	935			16 $\frac{1}{4}$	858	26 $\frac{1}{4}$	816
12	976	2	934	6 $\frac{1}{4}$	899	16 $\frac{1}{2}$	857	26 $\frac{1}{2}$	815
12	975	1 $\frac{3}{4}$	933	6 $\frac{1}{2}$	898	16 $\frac{3}{4}$	856	26 $\frac{3}{4}$	814
11 $\frac{3}{4}$	974	1 $\frac{1}{2}$	932	6 $\frac{3}{4}$	897	17	855	27	813
11 $\frac{1}{2}$	973	1 $\frac{1}{4}$	931	7	896	17 $\frac{1}{4}$	854	27 $\frac{1}{4}$	812
11 $\frac{1}{4}$	972	1	930	7 $\frac{1}{4}$	895	17 $\frac{1}{2}$	853	27 $\frac{1}{2}$	811
11	971	0 $\frac{3}{4}$	929	7 $\frac{1}{2}$	894	17 $\frac{3}{4}$	852	27 $\frac{3}{4}$	810
10 $\frac{3}{4}$	970	0 $\frac{1}{2}$	928	7 $\frac{3}{4}$	893	18	851	28	809
10 $\frac{1}{2}$	969	0 $\frac{1}{4}$	927	8	892	18	850	28	808
10 $\frac{1}{4}$	968	0	926	8 $\frac{1}{4}$	891	18 $\frac{1}{4}$	849	28 $\frac{1}{4}$	807
10	967	BRITISH 0 925		8 $\frac{1}{2}$	890	18 $\frac{1}{2}$	848	28 $\frac{1}{2}$	806
•9 $\frac{3}{4}$	966			8 $\frac{3}{4}$	889	18 $\frac{3}{4}$	847	28 $\frac{3}{4}$	805
9 $\frac{1}{2}$	965	STANDARD.		9	888	19	846	29	804
9 $\frac{1}{4}$	964			9 $\frac{1}{4}$	887	19 $\frac{1}{4}$	845	29 $\frac{1}{4}$	803
9	963	W		9 $\frac{1}{2}$	886	19 $\frac{1}{2}$	844	29 $\frac{1}{2}$	802
8 $\frac{3}{4}$	962	0 $\frac{1}{4}$	924	9 $\frac{3}{4}$	885	19 $\frac{3}{4}$	843	29 $\frac{3}{4}$	801
8 $\frac{1}{2}$	961	0 $\frac{1}{2}$	923	10	884	20	842	30	800
8 $\frac{1}{4}$	960	0 $\frac{3}{4}$	922	10 $\frac{1}{4}$	883	20 $\frac{1}{4}$	841		
8	959	1	921	10 $\frac{1}{2}$	882	20 $\frac{1}{2}$	840		

CHAPTER XII.

ON THE WEIGHTS USED FOR THE PRECIOUS METALS.

THE English standard weight for Gold and Silver is the so-called *Troy* pound of 5760 grains. 175 lbs. Troy are equal to 144 lbs. Avoirdupois (the ordinary weight for common goods).

The Troy Pound is divided into 12 ounces

The Ounce ,, ,, 20 dwts. (penny-weights)

The Pennyweight ,, ,, 24 grains

A Bar of Gold weighing, for instance,

17 lbs. 5 ounces 13 dwts. 20 grains,

the weight would, up to a recent period, have been returned in this fashion, as was then the invariable custom in the Bullion Trade and at the Bank of England. We have now, however, so far improved, at least, as to drop the lbs. and give the weight in ounces instead; the above bar would thus be returned now:—

209 ounces 13 dwts. and 20 grains.

Some Bullion brokers, in their account sales of Silver Bars, drop even the dwts. and grains, and give

the decimals of ounces instead. Thus a Silver Bar returned in the old fashion :—

72 lbs. 3 ounces 10 dwts. (grains are not marked) would, after the new method, be returned 867·5 ounces.

The *ounce* is the weight most in use, with its subdivisions into pennyweights and grains, or into decimals.

The weighing of Bullion demands properly constructed and accurately poised scales. Small quantities, up to a few ounces, are generally weighed in small scales of great delicacy that will turn with a fraction of a grain. Large quantities, say some 600 or 800 ounces of Gold (50 to 70 lbs. weight), require large and strong scales, yet sufficiently delicate to turn with one-quarter of a grain, even though this is not needed in actual practice, as Gold Bars are not weighed closer than to one-half pennyweight, or twelve grains. The scales for Silver have to bear Bars up to 300 lbs. weight, and are considered sufficiently exact if they turn with a pennyweight. The Bullion brokers in London weigh up to half-ounces—that is to say, if a Bar weighs, say $951\frac{1}{4}$ or $951\frac{3}{8}$ ounces, it is returned as 951; if $951\frac{5}{8}$ or $951\frac{7}{8}$, as $951\frac{1}{2}$.

Foreign Bullion dealers object to this somewhat loose system; they would have us weigh our Bullion to closer fractions. But the difference is after all very trifling; and as it frequently works both ways (excepting in the case of Silver going to India), it is of no great importance practically. The Bullion importers are prepared for and know how to take it into account in their operations with large quantities.

In France the *Kilogramme* is used, divided into 1,000 parts or Grammes. The French weigh to much greater exactness and smaller fractions than we do here.

The French Kilogramme is equal to 2·679227 English Troy Pounds, or 32·1507225 English Troy ounces.

One Troy ounce consequently weighs 0·0311035 kilogr. or 31·1035 grammes.

In Germany the *Zollpfund* (Zoll-Verein pound), or *Münzpfund* (Mint pound), is used. This is exactly one-half of a kilogramme, and is divided into 500 grammes.

In Hamburg the *Cologne mark* is employed, of 8 Unzen, or 16 Loth, or 64 Quentchen, subdivided into fractions of one-quarter. The Hamburg Cologne mark weighs 233·85489 grammes, or 3609 English Troy grains.

In the United States the English Troy Ounce and Decimals are used.

The *Decimal system*, on the basis of the Kilogramme, will, it is to be hoped, shortly be adopted all over the World.

CHAPTER XIII.

THE PRICES OF GOLD AND SILVER.

THE British Mint gives £3 17s 10½d for every Troy ounce of British Standard Gold. This Standard Gold (twenty-two carats fine) is coined into Sovereigns and Half-sovereigns. By law *forty lbs. Troy of Standard Gold are coined into 1869 Sovereigns*. Forty pounds Troy being equal to 480 ounces, the division of 1869 gives—

$$\begin{array}{r}
 480 \text{) } 1869 \text{ (} £3 \text{ } 17\text{s } 10\frac{1}{2}\text{d per ounce.} \\
 \underline{1440} \\
 429 \times 20 \\
 \hline
 8580 \text{ Shillings} \\
 \underline{480} \\
 3780 \\
 \underline{3360} \\
 420 \times 12 \\
 5040 \\
 \underline{4800} \\
 240 \\
 \hline
 480 = \frac{1}{2}
 \end{array}$$

The Mint makes no charge for Coinage, or Mintage, to the party bringing Gold into it, who is generally

called the *importer*; but he has to pay for the Assays, and he must bring a certain quantity (not less than £20,000 in value at the time) of Gold to that establishment. The importer may also have to wait fourteen days or longer before he obtains the Coin.

This makes it somewhat inconvenient to deal direct with the Mint, and it is preferable to take Gold Bars to the Bank of England, which will at once pay for the same at the rate of £3 17s 9d per ounce Standard. This is three-halfpence less than the Mint price; but the Bank takes any quantity at this rate, and pays in full as soon as the Assays are completed,—a day or two after delivery. The Bank clears a profit of three-halfpence per ounce for the trouble which it takes in the business, but to the Bullion Dealer this method of obtaining value for Gold is a convenience of much greater importance than the payment of the small charge for the accommodation.

The Bank thus buys Gold of the Public at the rate of £3 17s 9d per ounce Standard, and sells it again to the Public at the rate of £3 17s 10½d per ounce; and Gold is thus taken into the Bank, or taken away from the Bank, according to the state of the *Exchanges*.

The Bank is now the principal importer of Gold Bullion into the British Mint, and an arrangement exists between the two establishments by which regular periodical Coinages take place.

The price of £3 17s 9d per ounce Standard, called the Bank price, must be taken as the ordinary current rate by which the Market is guided. The

Mint price of £3 7s 10½d per ounce otherwise forms the basis for the valuation of foreign Coins, as compared with the British Gold Coins.

Sometimes, when Gold is in much demand for Export, Bullion dealers pay £3 17s 9½d, or £3 17s 10d per ounce; and the shipments of Gold coming in from Australia or other parts, instead of going into the Bank of England, are sent Abroad. If the demand still increases, the Exporters buy Gold Bars from the Bank at £3 17s 10½d per ounce; but so long as the Bank has Gold, which is always the case, the price cannot go beyond this.

There is a certain description of Gold called *Refinable Gold*, which is in great demand by Refiners, who will pay for it at the rate of from £3 17s 11d to £3 18s 1d per ounce. Of this we shall have to say more hereafter; but the Bank of England purchasing rate always remains

£3 17s 9d per ounce Standard;
and the Bank is bound to buy all the Gold offered to it at this price, and equally bound to sell at the Mint price of £3 17s 10½d per ounce Standard.

The Gold Coinage of the country, therefore, rests on a fixed basis, and a Bar cast of one thousand new full weight Sovereigns ought, at the price of £3 17s 10½d per ounce, to be worth exactly £1,000, unless an accidental loss of weight should have taken place in the casting.*

* In the Chapter on the British Mint it will be shown that this is not always the case.

The British Silver Coinage rests on a different basis. Neither the Bank nor the Mint is bound to buy Silver Bars; but the Mint issues Silver Coins at the price of 5s 6d per ounce Standard. (British Standard for Silver is 222 fine Silver in 240 dwts. metal). In the open Market the price of Standard Silver varies from 5s 0½d to 5s 2d per ounce. By law one pound Troy of Standard Silver is coined into sixty-six shillings in Silver; twenty shillings of such Silver consequently weigh $3\frac{7}{11}$ ounces. $3\frac{7}{11}$ ounces, at 5s 6d per ounce, are exactly 20s; but at the average market price of, say 5s 1d per ounce, the value would be only 18s 6d.

The British Mint, in fact, which coins Gold free of expense, charges heavily for the Silver Coinage, and makes a large profit thereby. The Mint buys Silver (through the Bank) at the *market price* of 60½d to 62½d per ounce Standard, and sells it to the public, in the shape of Coin, at 66d per ounce Standard, the profit thus realised is the *seignorage* accruing to the Government. This *seignorage*, or duty, is not only sufficient to pay the expenses of the Mint, but it also enables that establishment to undertake the obligation of giving new Silver Coin in exchange for worn and light pieces; and this is by no means an inconsiderable item, as it amounts to more than one-half per cent. on the Coinage of a year.

The reader must bear in mind accordingly, that £1,000 in Gold, whether in the shape of Coins or of Bars, are, as a rule, intrinsically worth £1,000;

whereas £1,000 in British Silver Coin are only worth about £925 in Silver Bars.

The monetary system of Great Britain invests Gold alone with a fixed or Standard value, whilst Silver is regarded simply in the light of a commercial commodity, varying in price as any other article of commerce; and, for the difference between the market value and the Mint price of the Metal, Silver Coins serve merely as tokens.

The market price of Silver in England is dependent on supply and demand, and oscillates, as we have stated before, between

60 $\frac{1}{4}$ d and 62 $\frac{1}{2}$ d per ounce Standard.

In France a different system prevails—the so-called *double Standard*.* The Mint in France pays fs. 3,100·00 for one kilogramme Gold 900 fine (which is the quality of the French Coinage), and fs. 200·00 for one kilogramme Silver 900 fine; charging fs. 6·70 per kilogramme for the Coining of Gold, and fc. 1·50 for the Coining of Silver. This makes the actual Mint price for fine Gold, fs. 3,437·00; for fine Silver, fs. 220·55 per kilogramme.

* Before 1816 Silver was the chief legal tender and the principal Standard of Value in England. The Silver Currency was then struck at the rate of 62d per ounce Standard. Owing to the exportation of full weight Silver Coins, the latter were fast disappearing, and the Mintage charges became too heavy. The Silver valuation was therefore abolished at that period, and the Gold valuation substituted for it.

(For the so-called *Market* prices see chapter on France.)

In other countries, in Germany, Holland, &c., the position is the reverse of that in England. *Silver* is the only fixed Standard, and *Gold* has a variable price. In Prussia, for instance, the Mint Pound (half-kilogramme) of pure Silver is taken by the Mint at 30 Thalers, deducting $11\frac{1}{2}$ Silbergroschen for Coinage; but Gold is bought at an average price of 466 Thalers per Mint Pound, with a discount or premium, varying from $\frac{1}{3}$ to $\frac{3}{4}$ per cent.

In the Standard of the British Coinage 1 part of Gold is worth $14\frac{1}{4}$ of Silver; in the French double Standard, 1 part of Gold is equal to $15\frac{1}{2}$ of Silver; in the countries where the Silver Standard prevails, the proportions vary from 1 to $15\frac{1}{4}$ to $15\frac{3}{4}$.

In due course, when we come to the monetary systems of these countries, we shall enter into further particulars respecting Foreign Mint operations. We may also take occasion then to make some passing allusion to the late Monetary Convention, held in Paris in 1867, which seems to have adopted the British plan of the Gold valuation as the most suitable one.

The reader will now please to bear in mind the *Standard Rates* of 77s 9d per ounce as the *buying price* of the *Bank of England*, and 77s $10\frac{1}{2}$ d per ounce as the *Mint price for Gold*; and the *variable market price* of from $60\frac{1}{4}$ d to $62\frac{1}{2}$ d per ounce for *Standard Silver*.

VARIATIONS IN THE PRICES OF BAR SILVER
PER OUNCE STANDARD IN LONDON,
FROM JANUARY 1860.

Date.	Price.	Date.	Price.	Date.	Price.	Date.	Price.
1860		1861		1862		1863	
Jan. 5 ...	62 $\frac{1}{8}$	Mar. 7 ...	61	Feb. 7 ...	61 $\frac{3}{4}$	Jan. 8 ...	61 $\frac{3}{4}$
" 19 ...	62 $\frac{1}{4}$	" 14 ...	60 $\frac{3}{4}$	" 14 ...	61 $\frac{5}{8}$	" 29 ...	61 $\frac{5}{8}$
" 26 ...	62 $\frac{3}{8}$	" 21 ...	60 $\frac{5}{8}$	" 21 ...	61 $\frac{1}{2}$	Feb. 12 ...	61 $\frac{1}{2}$
Feb. 2 ...	62 $\frac{1}{4}$	April 11 ...	60 $\frac{7}{8}$	Mar. 6 ...	61 $\frac{3}{8}$	Mar. 19 ...	61 $\frac{3}{8}$
" 9 ...	62 $\frac{1}{8}$	" 18 ...	61 $\frac{1}{4}$	" 20 ...	61 $\frac{1}{4}$	April 9 ...	61 $\frac{1}{8}$
Mar. 22 ...	62	" 25 ...	61 $\frac{3}{4}$	" 27 ...	61	" 16 ...	61
" 29 ...	61 $\frac{7}{8}$	May 16 ...	60 $\frac{3}{4}$	April 3 ...	61 $\frac{1}{4}$	" 23 ...	61 $\frac{1}{4}$
April 4 ...	61 $\frac{3}{4}$	June 6 ...	60 $\frac{5}{8}$	May 8 ...	61 $\frac{1}{8}$	" 30 ...	61 $\frac{1}{8}$
" 19 ...	61 $\frac{5}{8}$	" 20 ...	60 $\frac{3}{8}$	" 15 ...	61 $\frac{1}{4}$	May 7 ...	61 $\frac{3}{8}$
" 26 ...	61 $\frac{3}{4}$	July 4 ...	60 $\frac{1}{8}$	" 22 ...	61 $\frac{1}{2}$	" 21 ...	61 $\frac{5}{8}$
May 3 ...	61 $\frac{5}{8}$	" 11 ...	60 $\frac{1}{4}$	" 29 ...	61 $\frac{5}{8}$	June 18 ...	61 $\frac{1}{2}$
June 7 ...	61 $\frac{3}{4}$	Aug. 8 ...	60 $\frac{1}{2}$	June 12 ...	61 $\frac{1}{2}$	" 25 ...	61 $\frac{1}{4}$
July 5 ...	61 $\frac{1}{2}$	" 15 ...	60 $\frac{3}{8}$	" 26 ...	61	July 2 ...	61
" 19 ...	61 $\frac{5}{8}$	" 22 ...	60 $\frac{1}{4}$	July 24 ...	61 $\frac{1}{4}$	" 9 ...	61 $\frac{1}{4}$
" 26 ...	61 $\frac{1}{2}$	Sep. 12 ...	60 $\frac{5}{8}$	" 31 ...	61 $\frac{1}{8}$	" 23 ...	61
Aug. 2 ...	61 $\frac{5}{8}$	" 26 ...	60 $\frac{7}{8}$	Aug. 7 ...	61	Aug. 6 ...	61 $\frac{1}{8}$
" 9 ...	61 $\frac{1}{2}$	Oct. 3 ...	60 $\frac{5}{8}$	" 14 ...	61 $\frac{3}{8}$	Sep. 3 ...	61 $\frac{1}{4}$
" 16 ...	61 $\frac{3}{8}$	" 10 ...	60 $\frac{3}{4}$	Sep. 25 ...	61 $\frac{1}{4}$	" 24 ...	61 $\frac{3}{8}$
" 23 ...	61 $\frac{1}{2}$	Nov. 7 ...	60 $\frac{7}{8}$	Oct. 9 ...	61 $\frac{3}{8}$	Oct. 8 ...	61 $\frac{1}{4}$
" 30 ...	61 $\frac{5}{8}$	" 20 ...	61 $\frac{1}{8}$	" 16 ...	61 $\frac{5}{8}$	" 15 ...	61 $\frac{3}{8}$
Oct. 18 ...	61 $\frac{3}{4}$	Dec. 5 ...	61 $\frac{1}{4}$	" 23 ...	61 $\frac{7}{8}$	" 22 ...	61 $\frac{1}{2}$
Nov. 15 ...	61 $\frac{5}{8}$	" 19 ...	61	Nov. 6 ...	62 $\frac{1}{8}$	" 29 ...	61 $\frac{5}{8}$
" 22 ...	61 $\frac{1}{4}$			" 20 ...	62	Nov. 5 ...	61 $\frac{1}{4}$
Dec. 20 ...	61 $\frac{3}{8}$	1862		" 27 ...	61 $\frac{7}{8}$	" 12 ...	61 $\frac{5}{8}$
		Jan. 2 ...	61 $\frac{1}{8}$	Dec. 4 ...	61 $\frac{3}{4}$	" 19 ...	61 $\frac{3}{8}$
1861		" 9 ...	61 $\frac{3}{8}$	" 24 ...	61 $\frac{7}{8}$	Dec. 10 ...	61 $\frac{1}{2}$
Jan. 10 ...	61 $\frac{1}{4}$	" 16 ...	61 $\frac{5}{8}$	" 11 ...	61 $\frac{3}{4}$	" 17 ...	61 $\frac{5}{8}$
Feb. 28 ...	61 $\frac{3}{8}$	" 30 ...	61 $\frac{1}{2}$	" 31 ...	61 $\frac{7}{8}$	" 31 ...	61 $\frac{5}{8}$

VARIATIONS IN THE PRICES OF BAR SILVER—*continued.*¹

Date.	Price.	Date.	Price.	Date.	Price.	Date.	Price.
1864		1864		1865		1866	
Jan. 7 ...	61 $\frac{7}{8}$	Aug. 18 ...	61 $\frac{1}{2}$	Oct. 5 ...	61 $\frac{1}{8}$	Aug. 16 ...	60 $\frac{3}{8}$
„ 14 ...	62 $\frac{1}{2}$	Sep. 1 ...	61 $\frac{5}{8}$	„ 26 ...	61 $\frac{1}{4}$	„ 30 ...	60 $\frac{5}{8}$
„ 21 ...	62 $\frac{1}{2}$	„ 15 ...	61 $\frac{1}{2}$	Nov. 9 ...	61 $\frac{5}{8}$	Sep. 6 ...	60 $\frac{3}{4}$
„ 28 ...	62	„ 29 ...	61 $\frac{3}{8}$	„ 30 ...	61 $\frac{1}{2}$	„ 13 ...	60 $\frac{7}{8}$
Feb. 4 ...	61 $\frac{7}{8}$	Oct. 6 ...	61 $\frac{1}{8}$	Dec. 14 ...	61 $\frac{5}{8}$	Oct. 1 ...	61
„ 11 ...	61 $\frac{1}{2}$	„ 13 ...	61 $\frac{1}{4}$	„ 21 ...	61 $\frac{7}{8}$	Nov. 8 ...	60 $\frac{7}{8}$
„ 18 ...	61 $\frac{1}{4}$	„ 20 ...	61 $\frac{5}{8}$			Dec. 20 ...	60 $\frac{3}{4}$
„ 25 ...	61 $\frac{3}{8}$	Nov. 3 ...	60 $\frac{7}{8}$	1866		1867	
Mar. 3 ...	61 $\frac{1}{2}$	„ 17 ...	61 $\frac{1}{8}$	Jan. 11 ...	61 $\frac{1}{2}$	Jan. 3 ...	60 $\frac{7}{8}$
„ 23 ...	61 $\frac{3}{4}$	„ 24 ...	61 $\frac{3}{8}$	„ 25 ...	61 $\frac{3}{4}$	Feb. 7 ...	60 $\frac{3}{4}$
April 7 ...	61 $\frac{5}{8}$	Dec. 1 ...	61 $\frac{5}{8}$	Feb. 1 ...	61 $\frac{1}{2}$	Mar. 21 ...	60 $\frac{5}{8}$
„ 14 ...	61 $\frac{5}{8}$			„ 8 ...	61 $\frac{3}{8}$	„ 28 ...	60 $\frac{3}{4}$
„ 21 ...	61 $\frac{1}{2}$	1865		„ 15 ...	60 $\frac{7}{8}$	„ 28 ...	60 $\frac{3}{4}$
„ 28 ...	61 $\frac{1}{4}$	Jan. 5 ...	61 $\frac{1}{2}$	„ 22 ...	61	April 4 ...	61 $\frac{1}{8}$
May 5 ...	61 $\frac{1}{8}$	Feb. 2 ...	61 $\frac{3}{8}$	„ 22 ...	61	„ 11 ...	60 $\frac{3}{4}$
„ 12 ...	61	Mar. 1 ...	61	„ 22 ...	61	May 23 ...	60 $\frac{3}{8}$
„ 19 ...	60 $\frac{7}{8}$	„ 30 ...	60 $\frac{5}{8}$	April 5 ...	61 $\frac{3}{8}$	June 13 ...	60 $\frac{1}{2}$
„ 26 ...	61 $\frac{1}{8}$	May 4 ...	60 $\frac{3}{4}$	„ 19 ...	61 $\frac{1}{4}$	Aug. 15 ...	60 $\frac{3}{8}$
June 2 ...	61 $\frac{1}{4}$	„ 11 ...	60 $\frac{5}{8}$	May 10 ...	61 $\frac{1}{2}$	Sep. 5 ...	60 $\frac{1}{2}$
„ 9 ...	61 $\frac{3}{8}$	June 15 ...	60 $\frac{1}{2}$	„ 17 ...	62	„ 12 ...	60 $\frac{3}{8}$
„ 30 ...	61 $\frac{1}{8}$	„ 29 ...	60 $\frac{3}{4}$	June 14 ...	62 $\frac{1}{8}$	Oct. 17 ...	60 $\frac{1}{2}$
July 7 ...	61 $\frac{1}{4}$	Aug. 31 ...	60 $\frac{5}{8}$	„ 28 ...	61 $\frac{5}{8}$	„ 24 ...	60 $\frac{3}{8}$
„ 14 ...	61 $\frac{1}{8}$	Sep. 7 ...	60 $\frac{7}{8}$	July 19 ...	61 $\frac{1}{4}$	Nov. 28 ...	60 $\frac{1}{2}$
Aug. 4 ...	61 $\frac{1}{4}$	„ 14 ...	60 $\frac{3}{4}$	„ 26 ...	60 $\frac{5}{8}$	Dec. 5 ...	60 $\frac{3}{4}$
„ 11 ...	61 $\frac{1}{8}$	„ 21 ...	60 $\frac{7}{8}$	Aug. 9 ...	60 $\frac{1}{2}$	„ 31 ...	60 $\frac{3}{8}$

CHAPTER XIV.

PRACTICAL DIRECTIONS FOR CALCULATING THE VALUE OF
BULLION IN ENGLAND.

THE three factors—fineness, weight, and price—being thus established, we are now in a condition to determine the Money value of any given piece of Gold.

An ounce of pure Gold reported B 2·0, or 24 carats fine, is worth, calculated by rule of three

$$22 : 77s\ 9d^* :: 24 : a$$

$$22)77s\ 9d(3s\ 6\frac{9}{22}d \times 24 = 84s\ 9\frac{9}{11}d$$

or £4 4s 9 $\frac{9}{11}$ d.

An ounce of twenty carats Gold (W 2·0) is worth, £3 10s 8 $\frac{2}{11}$ d; Gold of eighteen carats, £3 3s 7 $\frac{4}{11}$ d; of fourteen carats, £2 9s 5 $\frac{8}{11}$ d; of twelve carats, £2 2s 4 $\frac{10}{11}$ d, &c. Thus, every degree of fineness can be calculated in value per ounce weight. This method, although it gives awkward fractions, is convenient enough where a few ounces, without any subdivisions into pennyweights and grains, are to be calculated; but, where, as is usually the case, there are several Bars, of different degrees of fineness, and fractional weights,

* We take the Bank price here as the ruling rate.

it is much too cumbersome. In such cases it is better to *Standard* the whole, *i.e.*, to reduce each Bar, upon the Assay Report, from its actual weight to the Standard weight, add together the several Standard weights found, and multiply the total by the Standard price to find the value of the parcel.

A Bar of 100 ounces reported B 2·0 carats, is worth 84s 9 $\frac{9}{11}$ d per ounce fine,

$$100 \times 84s \ 9\frac{9}{11}d = £424 \ 1s \ 9\frac{9}{11}d.$$

The same Bar, reduced first to the Standard weight:—

100 ounces twenty-four carats fine

= 109 ounces 1 dwt. 19 $\frac{7}{11}$ grains* twenty-two carats fine, or Standard weight,

at 77s 9d per ounce = £424 1s 9 $\frac{9}{11}$ d.

The following is a convenient rule for Standarding :

Multiply the actual weight of the Bar by the Betterness or Worseness reported, and divide the product by 22. Add the Betterness, or subtract the Worseness found, to or from the actual weight; the result will be the Standard weight, which, at 77s 9d per ounce Standard, will give the value of the Bar.

The shortest way to do this, is to put down for each carat of the Betterness or Worseness, the actual weight; for each grain, one-fourth the actual weight; and for fractions of grains, the corresponding fractions

* It is not customary to give fractions of grains, which is done here only to show that the result is exactly the same in both calculations.

of the one-fourth,—add up the total, and divide it by 22 to find the difference between the actual and the Standard weight.

Example :—

	Oz.	Dwts.	Grns.
<i>Gold Bar</i> weighing . . .	201	15	12
Assay B 1 carat $3\frac{1}{2}$ grains			
For 1 carat . . .	201	15	12
„ 2 grains ($\frac{1}{2}$) . . .	100	17	18
„ 1 grain ($\frac{1}{4}$) . . .	50	8	21
„ $\frac{1}{2}$ grain ($\frac{1}{8}$) . . .	25	4	10
Divide by 22)	378	6	13
Betterness =	17	3	22
Add original weight . . .	201	15	12
Standard weight	218	19	10
At 77s 9d per oz., Standard	£851	5	0

Another Example :—

	Oz.	Dwt.	Grns.
<i>Gold Bar</i> weighing . . .	127	9	12
Assay W 1 carat $2\frac{3}{4}$ grains			
For 1 carat . . .	127	9	12
„ 2 grains ($\frac{1}{2}$) . . .	63	14	18
„ $\frac{3}{4}$ grain ($\frac{3}{16}$) . . .	23	18	1
Divide by 22)	215	2	7
Worseness	9	15	13
Actual weight oz.	127	9	12
Deduct Worseness	9	15	13
Standard weight oz.	117	13	23
At 77s 9d per oz.	£457	11	1

Third Example :—

	Oz.	Dwts.	Grns.
<i>Gold Bar</i> weighing : . .	52	10	0
Assay B 0 carat $1\frac{7}{8}$ grains			
For 1 grain ($\frac{1}{4}$) . .	13	2	12
„ $\frac{1}{2}$ grain ($\frac{1}{8}$) . .	6	11	6
„ $\frac{1}{4}$ grain ($\frac{1}{16}$) . .	3	5	15
„ $\frac{1}{8}$ grain ($\frac{1}{32}$) . .	1	12	19
Divide by 22)	24	12	4
Betterness =	1	2	9
<i>Add</i> actual weight . . .	52	10	0
Standard weight . . .	oz. 53	12	9
At 77s 9d per oz. . . .	£208	8	11

Fourth Example :—

	Oz.	Dwts.	Grns.
<i>Gold Bar</i> weighing . . .	137	6	0
Assay W 11 carats $2\frac{1}{2}$ grains			
For 10 carats . . .	1373	0	0
„ 1 carat . . .	137	6	0
„ 2 grains ($\frac{1}{2}$) . .	68	13	0
„ $\frac{1}{2}$ grain ($\frac{1}{8}$) . .	17	3	6
Divide by 22)	1596	2	6
Worseness =	oz. 72	11	0
Actual weight	oz. 137	6	0
<i>Deduct</i> Worseness . .	72	11	0
Standard weight . . .	oz. 64	15	0
At 77s 9d per oz. . . .	£251	14	4

With a little practice, these calculations become easy enough. It is also proper to state that there are sets of tables published, giving the value for every

rate of weight, computed upon every conceivable Assay report. These tables serve to facilitate the calculation of the value of Bullion, and to check the results.

We subjoin two Invoices of Gold Bars, viz., an Account Sales of a batch of Bars sold direct to the Bank of England; the charges for Remelting, Assaying and Portorage are deducted from the total; and an Invoice of a batch of Bars bought through a firm of Bullion brokers; the sellers pay the charges for Remelting and Assaying, but a Brokerage of $\frac{1}{16}$ th per cent. is charged to the purchaser.

ACCOUNT SALES OF FIVE BARS OF GOLD SOLD
TO THE BANK OF ENGLAND.

GOLD BARS.	WEIGHT.			ASSAY.		STANDARD.		
	Ozs.	Dwts.	Grns.	Carat	Grns.	Ozs.	Dwts.	Grns.
1	190	10	0	B	1 $3\frac{1}{2}$	206	14	17
2	201	3	12	„	0 $1\frac{1}{4}$	204	0	15
3	187	16	12	W	2 $3\frac{1}{4}$	163	16	7
4	159	11	0	„	1 $0\frac{5}{8}$	151	3	7
5	195	14	12	B	1 0	204	12	10
Standard . . .						930	7	8

Ozs. Dwts. Grns.

930 7 8 at 77s 9d per oz. . £3,616 16 0

Five Assays, at $\frac{1}{16}$ s 6d . £0 17 6

Melting . . £0 19 4

Less scrapings 0 5 0

Portorage 0 14 4
0 3 0

1 14 10

£3,615 1 2

In a transaction of this kind the Bank would at once, upon the receipt of the Gold, make a large advance upon it to the seller, say £3,000 in the case before us; paying him the balance, less charge for Assays, two days after, when the Assay report had come in.

INVOICE OF GOLD BARS TO MESSRS. M. N. & CO.

GOLD BARS.	WEIGHT.	ASSAY.	STANDARD.
	Ounces.	Carats	Ounces
1	45·625	B $4\frac{1}{4}$	47·828
2	65·850	„ $6\frac{5}{8}$	70·807
3	175·725	„ $4\frac{1}{8}$	} 367·505
4	175·325	„ $4\frac{1}{8}$	
5	78·225	W $1\frac{3}{8}$	
6	205·725	B $4\frac{3}{4}$	216·829
7	44·050	„ $7\frac{5}{8}$	47·867
8	93·575	„ $4\frac{3}{4}$	98·626
9	229·900	„ $3\frac{3}{8}$	238·717
10	207·250	„ $3\frac{1}{2}$	215·493
11	142·700	„ $3\frac{7}{8}$	148·984
12	59·800	„ $3\frac{5}{8}$	62·263
13	65·750	„ $3\frac{1}{4}$	68·178
14	26·000	„ 4	27·182
Standard			1687·282

1687·282 ozs. at 77s $9\frac{1}{2}$ d per oz. £6,562 16 6

CHARGES—

Packing cases, &c. . £0 11 6
 Cartage 0 8 0
 Brokerage, $\frac{1}{16}$ th . . 4 2 0

5 1 6

 £6,567 18 0

In this invoice the weights are given in ounces and decimal fractions of ounces; the Assays in grains simply, instead of in carats and grains. The Gold is sold at 77s 9½d per ounce Standard (probably because there was at the time a demand for Gold for exportation); and one-sixteenth per cent. Brokerage is charged.

The Bars are generally weighed before the Assay pieces are cut off, which, with the Assay papers, belong to the purchaser.

The calculation for Silver Bullion is less complicated than that for Gold. The weights are given in ounces and half ounces only; the Assays in pennyweights and quarter-pennyweights.

Taking the price of Standard Silver (222 fine in 240 dwts.) at 61d, what is the value of one ounce pure Silver, or B 18 dwts.?

By the rule of three—

$$\begin{aligned} 222 : 61 :: 240 \\ 240 \times 61d \div 222 \\ = 65\frac{105}{111}d. \end{aligned}$$

The value of one ounce fine Silver at 61½d per ounce Standard is 66½d.

The same as for Gold, so for Silver, it is more convenient to reduce the actual weight of the Bars to the Standard weight. *Multiply the actual weight by the Report, and divide the product by 222; add the Betterness to, or Subtract the Worseness from, the actual weight.*

Example :—

	Ounces.
Silver Bar weighing	1000
Assay B 10 dwts.	
	10 dwts.=10,000
Divide by 222	
Betterness	45·1
Add actual weight	1000·0
Standard weight	1045·1
At 61d per oz.	£265 12 4

Another Example :—

	Ounces.
Silver Bar weighing	835·50*
Assay W $28\frac{1}{2}$ dwts.	
	$28\frac{1}{2} \times 835\cdot50 = 23811\cdot75$
Divided by 222 gives Worseness	107·25
Actual weight	835·50
Deduct Worseness	107·25
	728·25
At 61d per oz.	£185 2 0

We subjoin two Invoices of Silver Bars, viz., an Account Sales of Bars sold to a Bullion dealer; and an Invoice of a batch of Bars bought through a Broker for India. The fractions of ounces are in decimals.

* The decimal is here used.

INVOICE OF SILVER BARS TO BE SHIPPED
TO INDIA:—

SILVER BARS.	WEIGHT.	ASSAYS.	STANDARD.
	Ozs.	Carats	Ozs.
1	817·0	B 17	879·563
2	850·5	„ 17½	
3	757·5	„ 17½	
4	909·5	„ 17½	2715·951
5	662·0	„ 17	712·694
6	913·5	„ 16½	981·395
7	699·5	„ 17	
8	423·0	„ 17	1208·457
9	311·5	„ 17½	
10	573·0	„ 17½	954·224
11	935·5	„ 17	
12	893·0	„ 17	
13	890·0	„ 17	
14	1010·0	„ 17	4014·015
15	913·5	„ 16½	981·395
			12447·694

At 62d per oz. . . . £3,215 13 1

Packing 15 cases, &c. £1 17 6

Cartage to Station, &c. 0 10 6

Brokerage, ⅙th per cent. 4 0 4

6	8	4
£3,222	1	5

This Silver, we may incidentally remark here, is very *fine*, as it is required for India.

ACCOUNT SALES OF SILVER BARS SOLD TO
MESSRS. M. N. & CO.:—

SILVER BARS.	WEIGHT.	ASSAYS.	STANDARD.
	Ozs.	Carats	Ozs.
1	903·5	B 14	960·477
2	871·0	W 29½	755·259
3	957·5	B 16½	1028·665
4	642·0	„ 15	685·378
5	779·0	W 7	754·436
6	934·5	„ 8	900·824

Total standard 5085·039

At 61d per oz. £1,292 8 11

Melting . £3 2 6

Less grains 0 17 6

————— £2 5 0

Six Assays, at 1s 6d 0 9 0

Cartage, &c. . . . 0 7 6

Brokerage, ½th per cent. 1 12 3

————— 4 13 9

Net proceeds £1,287 15 2

The market price here is 61d per oz.

We have so far described the English method of calculating Bullion;—it is cumbersome and old-fashioned. The French method, entirely based on the decimal system, is much more convenient, as we shall in due course have occasion to see.

Foreign Gold and Silver Coins, which a number of Assays have shown to be always of the same fineness, are often bought at so much per ounce, without being first remelted into Bars.

French 20 franc pieces, for instance, of 900 fine, British Report W $0.1\frac{5}{8}$, are worth about 76s $3\frac{1}{4}$ d per ounce. The Bank of England purchases them at 76s $2\frac{1}{2}$ d per ounce weight.

Account Sales of Fs.200,000, in	Ounces.
20 Franc pieces, weighing .	2074.4
At 76s $2\frac{1}{2}$ d per oz., .	£7904 6 7

Sold to the Bank of England.

Mexican Silver Dollars are also bought by the ounce (Assay about 900).

Account Sales of 100,000 Mexican	Ounces.
Dollars, weighing	86,875
At 59d per oz.	£21,356 15 5
Brokerage, $\frac{1}{8}$ th per cent.	26 13 11
	£21,330 1 6

The price of Mexican Dollars varies in the market according to the greater or lesser demand for the Continent or for India.

CHAPTER XV.

“PARTING” BULLION.

THE Assays and calculations in the last chapter have reference to Gold and Silver alone, the value of the Alloy in the Bullion being left altogether out of account.

Copper is the Metal most in use for Alloying Gold and Silver. Other base Metals are rarely employed for the purpose, and need not be considered here. The Copper Alloy contained in Gold or Silver Bullion is of such insignificant value that it is not paid for. A Bar of Gold, for instance, of 120 ounces of Standard fineness is worth £466 10s; the Copper contained in it, 10 ounces in weight, at the price of 1s per pound, would be worth 10d, or less than $\frac{1}{11,000}$ th part of the value. In a Bar of Silver of the same weight and fineness, which is worth £28 5s 3d—the Copper is worth 9d, or $\frac{1}{750}$ th part. Moreover, the Alloy is not even available as Copper.

It is not customary, therefore, nor is it practicable, to allow for the value of the Copper in Gold or Silver Bullion. In cases where the amount of Copper in a Bar very largely exceeds that of the Gold or the Silver, the Bar likely containing only a few per cent. of either,

the Copper may be paid for; but then a Bar of this kind is not a *Gold or Silver Bar Alloyed with Copper*, but a *Copper Bar* containing small quantities of Gold or Silver; and as such, it is not Bullion that a Banker would have to deal with.

The Metallurgist, or the Refiner, may purchase such Metal upon suitable terms. But Bankers' Bullion must always have a preponderating proportion of the Precious Metals in it; indeed, as a rule, Bars are of about the same fineness as Coin, or as pure as they can be obtained, ranging from 600 to 998 fine, for both Gold and Silver; and the value of the Copper in such Bars is not taken into account.

So-called *Parting Bullion* is either Gold containing Silver, or Silver containing Gold. Whenever the respective quantities of the two Precious Metals in such mixtures stand in certain proportions to each other, it is worth while to *part* them, so that both the Gold and the Silver can be made separately available.

We have already stated that Native Gold is always found alloyed with Silver; and, according to the different localities whence it is obtained, the Assay may run from 600 to 990 fine,* the balance being Silver. Again, Silver Bars frequently contain Gold; some of the Californian Silver holds 20 or 30 Millièmes Gold, or about half the value of the mixed Metal; and other

* We shall in future always use the *Millièmes* system of expressing fineness, as it is the more convenient of the two.

countries furnish Silver with from 1 to 5 per cent. in value of Gold in it. Old Silver Coins, certain descriptions of Dollars, and Plate melted down, are occasionally assayed for traces of Gold.

The *parting* of Gold and Silver is effected by the process of *Refining*, which will be described in the next chapter. A Refinery is generally a large establishment; and it may well be imagined that the business of Refining cannot be done free of charge. The process of Refining, like all other operations of this kind, involves a certain expenditure of time, labour, and materials, and a charge is consequently made for Refining.

In London the charges for Refining Bullion are as follows :—

For Gold containing Silver they amount to 5s 6d per 12 ounces of Metal (or $5\frac{1}{2}$ d per ounce).

For Silver, to $10\frac{1}{4}$ d per 12 ounces of metal (or less than 1d per ounce.)

The question now resolves itself into this : Is there sufficient Silver in a Bar of Gold, or enough Gold in a Bar of Silver, to make it worth while to *part* the two Metals ?

For, where this is not the case, the Bullion had better be sent on to the Mint at once, to be alloyed there with Copper to the Standard of Coinage. Let us see, then, what proportionate amount of Gold in a Bar of Silver, or of Silver in a Bar of Gold, constitutes a “sufficiency” to offer a fair margin for the process of parting.

We thus have		
100 ounces fine Gold, equal to 109·091		
ounces Standard at 77s 9d . . .	£424	1 10
20 ounces fine Silver, worth at 5s 6d		
per ounce fine	5	10 0

The Silver is worth	.	£5 10 0	
We have to deduct	.	2 15 0	for Refining,
which leaves a margin of	.	£2 15 0	

Now take another Bar, weighing also

The charge for Refining 120 ounces of Metal is, as before, at $5\frac{1}{2}$ d per ounce, £2 15s; which is the exact sum we get for the Silver. There is thus no profit

made here, and the Refining may accordingly just as well be left alone.

From these results we may deduce the following rules respecting the Refining of Gold in England, viz. :—

If the Gold in the mixed Bar is of the fineness of British Standard—or finer—it does not pay for Refining; if it is below Standard, it will bear the charge, and leave a margin—in which case it is called *Refinable Gold*. Thus we know at a glance that Gold reported *Worse* is *Refinable*, and that the excess of Silver in the mixed Bar will pay the expenses of the process and leave a clear profit.

By saying that Standard Gold will not pay for *Refining* we mean that it will not pay for the public. The Refiners *charge* the public at the rates stated, and they make their profit out of these rates of course; so that where they refine for their own account they can work with a much closer margin. They will, therefore, frequently buy Gold above Standard, and yet the Refining will pay *them*. Refinable Gold is accordingly *sought* by them; and whilst the Bank of England pays but 77s 9d per ounce Standard, Refiners will pay 77s 9½d to 78s per ounce, according to the greater or lesser proportion of Silver in the mixed Bar.*

The cost of *Refining Silver* is 10½d for 12 ounces. What per centage of Gold in the Bar will pay the cost of Refining, and leave a fair margin? Suppose we have a Bar of 1000 ounces, which contains 950 ounces

* The Refining charge in France is much less than in England.

of pure Silver, 1 ounce of Gold, and 49 of baser Alloy.

950 ounces of fine Silver are

1027 ounces Standard at 61d . . . £261 0 7

1 ounce of fine Gold. 4 4 0

Refining, at the rate of $10\frac{1}{4}$ d for 12

ounces, is (for the 1000 ounces) . . . 3 11 2

which leaves accordingly a margin of 12s 10d on the Bar.

It *pays* then to refine Silver containing 1 per mill. by weight of Gold in the Bar.

Bar Silver of this kind—which is called *Doré* Silver in the Market—is accordingly in request for Refining purposes, and is sold at a somewhat higher price than ordinary Bar Silver.

The large Refiners are not in the habit of Refining for other people; they prefer purchasing the Refinable Bullion, according to Assay, deducting the charge for Refining, which is—

For Gold—1 ounce of Silver for every lb.
of Metal, equal to 5s 6d per lb.

For Silver—5 grains of Gold for every 12
ounces of Metal, equal to about $10\frac{1}{4}$ d per oz.

The subjoined Account Sales of Gold Bars, and Invoice of Silver Bars, will show the way in which the calculation is made.

**ACCOUNT SALES OF 18 BARS OF CALIFORNIAN
GOLD SOLD FOR MESSRS. M. N. & CO.:—**

	WEIGHT.	ASSAY.	STANDARD.	Pennyweights of Silver per 12 ozs.	Pennyweights of Silver in the Bar, less 20 dwts. for each 12 ozs.
	Ozs.	Carats	Ozs.		
21	251·000	W 2·2 $\frac{3}{8}$	221·408	44 $\frac{1}{2}$	512
22	252·300	„ 2·3 $\frac{1}{4}$	220·046	47	567
23	60·025	„ 3·1	51·158	50 $\frac{1}{2}$	152
24	71·775	„ 6·0 $\frac{5}{8}$	51·691	79 $\frac{1}{2}$	355
25	37·300	„ 4·1 $\frac{1}{8}$	30·042	61	127
26	37·275	„ 4·1 $\frac{1}{4}$	29·969	60 $\frac{1}{2}$	125
27	40·075	„ 3·3 $\frac{7}{8}$	32·847	58	126
28	40·350	„ 4·0	33·014	58	127
29	102·475	„ 3·1 $\frac{1}{8}$	87·192	51	264
30	106·975	„ 2·1 $\frac{1}{8}$	95·884	38 $\frac{1}{2}$	165
31	34·050	„ 4·3	26·699	64	124
32	54·275	„ 1·2 $\frac{7}{8}$	50·035	34 $\frac{1}{2}$	65
33	55·700	„ 3·0 $\frac{1}{8}$	48·026	48 $\frac{1}{2}$	132
34	56·575	„ 0·2 $\frac{1}{8}$	55·209	24 $\frac{1}{2}$	21
35	20·775	„ 1·1 $\frac{1}{8}$	19·565	32	20
36	26·375	„ 0·1 $\frac{3}{8}$	25·963	22	4
37	31·725	„ 3·0 $\frac{7}{8}$	27·084	51	82
38	88·150	„ 2·2	78·134	40	147

1367·175

1183·966

3115

1183·966 Standard ozs. at 77s 10 $\frac{1}{2}$ d £4,610 1 4

3115 pennyweights fine Silver at

5s 6d per oz. 42 16 7

£4,652 17 11

Brokerage, $\frac{1}{8}$ th per cent. £5 16 4

Eighteen Assays at 4s . 3 12 0

9 8 4

£4,643 9 7

The Refiner in this case has paid 77s 10 $\frac{1}{2}$ d per oz.
Standard for Gold.

The Assayer reports the Assay for Gold, stating,
at the same time, the Pennyweights of Silver present
in each 12 ounces of the Bar; the last column gives
the total number of pennyweights, *less 20 pennyweights
per lb. for Refining.*

INVOICE OF TWENTY BARS DORE SILVER,
BOUGHT FOR MESSRS. M. N. & CO.

	WEIGHT.	ASSAY.	STANDARD.	Grains of Gold per 12 ounces.	Grains of Gold in the Bar, less 5 grains of Gold for every 12 ounces.
	Ozs.	Dwts.	Ozs.		
48	915·0	W 14	857·30	424	31,949
49	869·5	„ 7	842·10	16	797
50	867·5	„ 7	840·15	10	361
51	868·0	„ 7	840·65	16	796
52	867·0	„ 6½	841·60	12	506
53	870·0	„ 7½	840·60	15	725
54	865·0	„ 6	841·60	16	793
55	867·0	„ 7	839·65	16	795
56	866·5	„ 7	839·20	17	866
57	869·5	„ 7	842·10	16	797
58	864·5	„ 7½	835·30	16	792
59	868·5	„ 7	841·10	16	796
60	869·0	„ 7	841·60	15	724
61	706·5	„ 17½	650·80	26	1236
62	733·5	„ 20	667·40	28	1406
63	773·5	„ 17½	712·55	33	1805
64	697·0	„ 24	621·65	6	58
65	798·0	B 5½	817·75	9	266
66	814·0	„ 12½	859·85	12	475
67	972·0	„ 11	1020·15	14	729
	16821·5		16293·10		46,672

At 61d per oz.	£4,141	3	3
46,672 grains Gold at 84s 7¼d per oz.			
fine	411	6	4
	4,552	9	7
Boxes and Packing	£1	0	0
Brokerage, ⅛ per cent	5	13	9
	£4,559	3	4

The Assayer states the grains of Gold for every 12 ounces of metal, and gives in the last column the total number of grains of Gold contained in each Bar, —less 5 grains per 12 ounces for Refining.

Incidentally, we call attention to the exceptional richness in Gold of the first of the Bars in this invoice.

When Gold is supposed to contain Silver, the Assay Paper in which the Assay piece is wrapped up is marked

Gold double

Parting.

Which is meant as an instruction to the Assayer to make a double Assay, and assay also for Silver present.

For Silver, the Assay Paper states

Silver double

Parting.

Instructing the Assayer to make a double Assay, and assay also for Gold. Acting upon these instructions, the Assayer reports the quantities found of both the Gold and the Silver.

Refiners generally seek to buy both *Refinable Gold* and *Doré Silver* at the same time, that they may melt them together, which, as we shall see in the next chapter, proves of considerable advantage in the subsequent process of Refining.

CHAPTER XVI.

GENERAL DESCRIPTION OF THE REFINING OF BULLION.

THE business of Refining Bullion, where it is carried on on a large scale, requires spacious and well-appointed premises. Tall chimneys must be erected, to carry off the smoke of the furnaces, and the fumes of the Acids used in the process. On the outside a Refinery looks very much like an ordinary manufactory.

There are four or five large Refineries in London, which almost exclusively share between them the Refining of Bankers' Bullion. Two of these establishments are worked in connection with eminent Foreign Banking Firms.

A number of smaller Refiners also carry on the business; but their operations are mostly confined to the purchasing and re-melting of old Jewelry and Plate. We believe that only a few of these actually Refine even their own meltings, as it is more convenient to sell the Bars to the larger Refiners, according to Assay.

The proportion of Bullion coming into the market from these sources is but small; the great bulk of the material is derived direct from the Gold and Silver

producing districts, or from the large Bullion centres, where the article is dealt in for Banking purposes.

The object of Refining is to obtain Gold and Silver in a state of purity. So, besides the parting of Gold from Silver, provision has to be made also for the removal of the baser Alloys, especially Copper, which is so often found in Bullion. The Refiner may be able to utilise, to a certain extent, the product furnished by the baser Alloys; but this is a matter which does not enter into our calculations here, where we have to deal simply with the parting of Gold from Silver.

This parting is effected either by Nitric Acid or by Sulphuric Acid. Gold, as we have already had occasion to state, resists the action of all Acids, except the Nitro-Muriatic; neither Nitric nor Sulphuric Acid, cold or boiling, has the slightest effect upon it.

But Silver is easily attacked by these two Acids. Nitric Acid will dissolve it even in the cold. Hot Nitric or hot Sulphuric Acid will very quickly convert it into Nitrate or Sulphate of Silver, which both are soluble Salts.

A piece of pure Gold may be put into Nitric Acid, and boiled in it for hours, without tarnishing, or losing one atom of its weight; whereas a piece of Silver put into cold Nitric Acid becomes instantly discoloured, and turns black; the Acid around it becoming turbid and agitated; and, when heat is applied, the Silver piece is speedily dissolved; the liquid acquiring a dark muddy colour, and turning quite black upon exposure to the light of the Sun

It is upon this well-known different deportment of

the two Metals with Acids that the process of parting is founded.

The Refiner purchases the Refinable Gold and the Doré Silver upon invoices, as shown in the last chapter. On entering the Refinery, a due account is taken of the several quantities of Gold and Silver in the Bars before the latter are allowed to pass into the hands of the workmen.

It is indispensable for the success of the operation that the weight of the Silver in the Bars should be at least double that of the Gold; and it is even expedient that it should be still much larger. Where the proportion of Gold in a Bar is greater than one to two as compared to the Silver, the Bar cannot be refined by this process, as the particles of the former Metal will so envelop and protect those of the latter that the Acid cannot get at them to act upon them. Whereas, with a large excess of Silver, the Gold particles are more disseminated through the mass so that the Acid can act freely upon the Silver. The larger the proportion of Silver in a mixed Bar, the more rapid is the action of the Acid upon it; however, the most suitable proportions for the purpose are about four parts of Silver to one part of Gold.

It is for this reason that the Refiner always seeks to buy Refinable Gold (Gold containing Silver), and Doré Silver (Silver containing Gold), in such quantities as will make up these proportions as nearly as possible. He thus manages to effect two partings at one and the same time. At present the supply in the Bullion market is pretty regular; occasionally, however, there

is a scarcity of either Refinable Gold or Refinable Silver, and slightly higher prices than usual are offered for the scarcer article of the two. In Australia and in other parts, where there is much Gold, with no continuous supply of Silver, the Refiners are obliged to keep on hand a large stock of Silver, to melt and refine with the Gold over and over again.

The subjoined illustrations will show the advantage of operating jointly on Refinable Gold and *Doré* Silver Bars,

A Bar of Californian Gold,	
weighing 200 oz. 850 fine,	
containing accordingly .	170 oz. of Gold
to	30 oz. of Silver

And

A Bar of Doré Silver,	
weighing 800 oz. 900 fine,	
with 10 oz. of Gold, and	
70 ounces baser Alloy,	
containing accordingly .	720 oz. of Silver
	10 oz. of Gold

melted and refined to-	
gether, will yield for	
product	180 oz. of pure Gold
	750 oz. of pure Silver

The complete parting of the Gold from the Silver in the Californian Gold Bar is entirely due here to the presence of the large proportion of Silver in the Doré Silver Bar. Were it not for this great excess of the latter Metal in the mixed Bar cast of the two,

the parting of the Gold from the Silver in the Californian Bar could not be accomplished.

When the Refiner has succeeded in mixing his Refinable Gold and Silver Bullion as nearly as possible in these proportions, batches of Bars, to the value of £25,000 to £50,000 at a time, are given out to the foreman of the operative department.

The Bars are first sent into the melting house, where about 800 ounces of Silver and 200 of Gold are placed in a crucible, melted down, and well stirred together. Instead of casting the mixed metals again into Bars, the melter proceeds to ladle out the fused Mass, and let it drop, in a thin stream, from a height of three or four feet, into a tub of cold water, which is kept cool by means of a running tap. The fiery Gold and Silvery stream enters the water with a spurting and hissing noise, attended with the rise of steam from the fluid, and the Metal instantly hardens, and splits into fragments; which—white-hot at the surface, red-hot an inch below it—a moment afterwards shine with a bright, silvery glitter, and cool at the bottom of the water, where they are finally found collected in a heap.

This process is called *Granulation*, and the object of converting the Bars into *Grains* is to give the Acid as much surface of Metal to work upon as possible. A solid Bar, even with the most suitable proportions of Silver and Gold in it, would take a much longer time to dissolve than these grains, which present all sorts of jagged and fantastic shapes, not unlike bits of tinfoil melted in a candle flame.

The metal grains, dried and weighed, are now ready for the chemical Refining process. The Parting may be effected either by *Nitric Acid*, or by *Sulphuric Acid*.

NITRIC ACID METHOD.—The granulated Gold and Silver Alloy, or *garble*, as it is technically termed, is put into large stone-ware vessels, and the proper quantity of Nitric Acid is poured over it. A dozen or more of these vessels are ranged closely together, upon a sand-bath furnace. A wooden dome, or hood surrounds them, with an opening at the top, leading into the flue of a tall chimney, so as to carry off the pungent nitrous red fumes, which are copiously discharged from the hot Acid.

After a few hours' boiling some of the fluid, which is then heavily charged with Silver, is drawn off into a vessel, and put aside; a fresh supply of Acid being added to the residuary mass in the vessels. The same process is repeated until all the Silver is dissolved; when the vessels are cold enough to be handled the remaining liquid is poured off into the same vessel which has received the first portions of the solution.

At the bottom of each stone vessel a dark brown, muddy deposit is found. This is *pure Gold*, in a pulverulent state, wet with the remains of the Nitrate of Silver solution. Water is then poured into the vessel, and the mass stirred about; when the Deposit settles again, the fluid is poured off, and added to the other portion of the solution. A number of washings, with careful draining each time, are required to

remove to the last traces of Silver remaining. The washings are of course also added to the Nitrate of Silver Solution.

The brown powder is then taken out of the vessel, dried by heat, and carefully weighed. People who have never seen Gold in the pulverulent condition would hardly take this brown stuff to be the King of the Metals; strong compression, however, will force its particles into cohesion, when the surface will shine here and there in patches with a yellow glimmer. A pinch of the powder, rubbed between the finger ends, will give a slight coating of a dull Gold colour. Rub a few grains of it against a sheet of glass or some other polished surface, and the side rubbed with it will glisten with Virgin Gold.

The dry powder is then melted in a crucible; shortly after it is turned out in the shape of a Bar, which is unmistakeably *Gold*; heavy, smooth, soft, brilliant, and *fine*.

There remains now the Silver to be reduced from the Nitrate to the Metallic state.

The solution of Nitrate of Silver collected from the stone vessels requires dilution before it can be properly acted upon. Water is, therefore, added to it copiously, and the diluted fluid is then poured into a large vat, called the *precipitating* vat. A solution of common Salt is added to it there, when a thick white mass, like clotted cream, instantly forms, which increases in bulk as more of the Solution of Salt is added, and settles finally at the bottom of the vat. The deposit formed is *Chloride of Silver*.

The combination of the Nitric Acid with the Silver had in this process, in the first instance, formed Nitrate of Silver in Solution. Nitrate of Silver, or Lunar Caustic, as it is often called, is one of the Salts of Silver. It is well known to Chemists and Photographers. Common Salt is Chloride of Sodium. The affinity of Silver for Chlorine is so strong that it will leave any other substance with which it is allied in a Solution to combine with Chlorine. Sodium has an equally strong affinity for Nitric Acid. Therefore, so soon as a Nitrate of Silver solution comes into contact with a Chloride of Sodium solution, the two metals—so to speak—exchange partners; the one combining with the Chlorine to Chloride of Silver, the other, after previous oxidation to Soda, with the Nitric Acid to Nitrate of Soda. The white precipitate forming in the mixed solution is so characteristic of this reaction, that very slight traces of Silver may be easily detected in a solution by the simple addition of common Salt. After the addition of the solution of Salt, the fluid in the vat is well stirred, and the white Chloride of Silver precipitate is allowed to subside to the bottom. The supernatant liquid above it is then tested, by further additions of Salt water, to see whether it still contains Silver. So long as white flakes continue to form, Salt is added, until further addition ceases to produce a precipitate. An excess of Salt is finally thrown in, to make all sure. After stirring, the mass is left at rest, to let the precipitate fairly settle. The clear supernatant liquid is then drawn off, and the Chloride of Silver

Deposit repeatedly washed, to remove the excess of the Salt. It is then collected, and transferred to a suitable receptacle, to let the water drain off.

The drained Chloride of Silver is, by the next process, reduced to the metallic state. The Chloride is transferred to large shallow pans, and diluted Sulphuric Acid is poured over it. A quantity of Zinc grains (granulated by pouring melted Zinc into cold water) are distributed over it. Hydrogen Gas begins to bubble up,—the Chlorine leaves the Silver,—and around the pieces of Zinc the white precipitate begins to show discoloration, and to crumble away into a dirty grey powder. The Zinc grains are slowly moved about, when the reducing action becomes general; and, after a while, the Chloride of Silver is all converted into what seems to be grey mud. The fluid portion is then removed, and the residuary fragments of Zinc are carefully washed, to detach the last particles of Silver adhering to them.

The grey mud remaining is simply—*Silver*. This is then collected and washed; when thoroughly dried, it will show its silvery nature on being rubbed upon a polished surface. It is now pressed into cakes by strong hydraulic pressure. The dried cakes are melted in crucibles, and cast into solid glistening Bars of *Fine Silver*.

It is proper here to remark that this process is, indeed, the quickest, but certainly not the cheapest. Nitric Acid is much more expensive than Sulphuric Acid. Still, the Nitric Acid process is very convenient, where

large buildings cannot be erected, and where there is an inadequate supply of Silver, compelling the Refiner to keep a stock of that Metal specially on hand ; and where the Refiner has to deal with Gold and Silver alone in the Refinable Bars. But where other Alloys—Copper, &c.—are present in the Bullion, which, as a matter of course, will dissolve together with the Silver, the method is less suitable. The Copper, for instance, is entirely lost ; which, though the value of that metal may be but small, is yet a matter of *some* moment at least.

The Mints of Philadelphia, San Francisco, South America, and some other countries, still use the Nitric Acid process. One of the more important London Refineries, being cramped for space, also *parts* Bullion still by this method ; but all large establishments in London, France, and Germany have now adopted the new French or Sulphuric Acid method.

SULPHURIC ACID METHOD. — The granulated Gold and Silver Alloy or garble is boiled in Sulphuric Acid in iron vessels lined with Lead (this latter metal not being much affected by Sulphuric Acid). A somewhat greater degree of heat is required, and a longer time. The Sulphurous Acid fumes, which are copiously disengaged during the ebullition, must be carried off, through proper openings in well closed hoods, into the flues.

When the whole of the Silver is dissolved to Sulphate, the Gold is found at the bottom of the vessel in the same state as in the Nitric Acid

process. The supernatant Silver solution is carefully decanted off, and the pulverulent Gold deposit is washed, dried, and finally melted into Bars of *Fine Gold*.

The decanted Solution, to which the washings of the Gold powder are added, contains the Silver in the form of Sulphate. It must be kept hot to prevent the crystallisation of this Salt. It is diluted with water, and drawn off into large elongated holders lined with Lead, and a number of pieces or plates of Copper are suspended in it. In obedience to the general chemical law—that a baser Metal, by reason of its greater affinity for Oxygen, will reduce a nobler Metal from its solution in an Acid—the Copper combines gradually into the Acid, forming Sulphate of Copper, or blue Vitriol, whilst the reduced Silver in the pulverulent form subsides to the bottom. When all the Silver has thus been eliminated—which is ascertained by testing from time to time a sample of the blue liquid, in a suitable glass, with Copper, to see whether further precipitation takes place or not—the blue solution is drained off. The *Water Silver*, or *Silver lime* (as the precipitate is called by the English; *Chaux d'argent* by the French), is washed, pressed, dried, and melted into Bars.

The blue solution afterwards passes through a process of evaporation, effected by heating and atmospheric action combined, which requires very extensive arrangements of holders and vats; it is ultimately refined, and crystallised into that well-known substance, blue Vitriol, or Sulphate of

Copper. Where the mixed Bullion operated upon contains Copper as an Alloy, the latter Metal is dissolved along with the Silver in the process of ebullition, and passes with the Silver solution into the precipitating apparatus, where it is left behind in the fluid as Sulphate, after the precipitation and removal of the Silver, increasing thus to the quantity of Blue Vitriol ultimately obtained.

A great portion of the Sulphuric Acid is also regained, which, after purification, is fit for further use; whereas in the Nitric Acid process the solutions of Nitrate of Soda and Sulphate of Zinc are lost, as well as all the Nitric Acid. In the Sulphuric Acid process nearly all the material can be utilised; the last produce—the crystallised Sulphate of Copper—has a market value, varying according to supply and demand.

Although it would appear almost a matter of certainty that Bullion—parted on such strictly defined laws of chemistry—should turn out entirely pure, it is, nevertheless, almost impossible to attain that result. Slight traces of Iron, Lead, and other metals will persistently remain, but in such infinitesimal quantities that we need not care about them. Repeated Refining, at the hands of a scientific chemist, will reduce these impurities to the lowest minimum; but at an expense incompatible with the economical requirements of business.

The Assayer will never consent to find Gold 1000 fine. He will insist upon *some* allowance for Alloy

remaining under any circumstances; so that $999\frac{1}{2}$ is considered fine, and even 999 fairly fine. Some of the French Refiners, however, do not scruple to boldly stamp their Silver Bars 1000 fine; whilst English Assayers will call them only 999 to $999\frac{1}{2}$ fine.

The practical Refiner, who may read this account of Refining operations, may not be quite satisfied with our description of them. Let it be taken into consideration, however, that our principal object here was to give the *general reader* an outline sketch of the process, and to endeavour to convey to his mind an idea of the principles upon which it is based. There are many differences and deviations from the operations here described, some of them important, others insignificant; and there are advantages and secrets in the business, which the Refiner jealously and carefully keeps to himself.

It forms part of the Refiner's business to turn to profitable account the baser Alloys separated from the Noble Metals. For Banking purposes, however, the baser Metals in Bullion have no value; and it is unnecessary that we should do more here than passingly allude to their elimination from Refinable Bullion.

Silver or Copper may be called the legitimate Alloys of Gold. Unless they be present in undue excess, they cannot, for Minting purposes, properly be termed *impurities*; whereas Platinum, Iridium, Iron, Quicksilver, Lead, Antimony, Arsenic, &c., which are sometimes contained in Gold, either disseminates

through the mass in solid particles, or more closely combined with the noble Metal, decidedly are so. The Quicksilver can be driven off by moderate heat; Lead and the other base Metals are removed by Cupellation, as, at the high temperature of the fusing point of Gold, the base metals are, in presence of Lead, or with the aid of fluxes, converted into highly fusible oxides, which are readily absorbed by the Cupel. Platinum and Iridium are separated from Gold by mechanical means.

A great deal of the Silver extracted from Lead Ores contains traces of Lead, which make the metal brittle and unsuitable for coining.

The Refining of masses of metal consisting chiefly of the baser metals, and of inferior ores, belongs to the province of the Miner and the Metallurgist: we have already had occasion to remark that metallic mixtures of this kind are not *Bullion*.

The presence of *Iridium* in Gold, and the *Brittleness* in Silver Bullion, are subjects reserved for treatment in a subsequent chapter.

The uninitiated might be led to think that the workmen in a Refinery, where such large masses of Bullion are under their hands, could pilfer without detection. The exact quantities of Gold and Silver present are, however, known with almost mathematical accuracy, and the Precious Metals pass from hand to hand, or in the charge of foremen, in such a way that robbery becomes almost impossible, or is, at least, at once detected. The managers of Refining establish-

ments fully understand how to guard against such mishaps.

The Profits made by large Refining establishments are variously estimated. The two largest Refiners of Bullion in London (who refine on the cheaper French plan, and yet charge as much as the Refiners by the old process) are working in the interest of two Banking firms. That there is a *direct* profit upon the operation itself scarcely admits of a doubt. As a rule, more Pure Metal is obtained than the Assay states, because English Assayers underrate actual fineness by one-half to one *Millième*; and there may be other little advantages, which, on large sums, make up a fair direct profit per annum.

Where large Refineries are carried on in connection with Banking and Bullion operations, they have an influence on the supply and demand of the Precious Metals in the market, and thereby yield indirect profits.

To those of our readers who have some knowledge of chemistry, or who, by chance, possess a few apparatus and utensils for chemical experiments, we can suggest a simple and amusing process, completely demonstrating the theory of *Parting Gold and Silver*.

The things required for this purpose are, a small piece of Silver, weighing about 2 pennyweights (say a sixpence); and a small piece of Gold, weighing about 1 pennyweight (say a bit of old Jewelry, Gold of about 14 to 18 carats fine). Upon the supposed degree of fineness of the two Metals here the proportion which

the Silver bears to the Gold is as about $2\frac{1}{2}$ parts of the former to 1 part of the latter.

A piece of Charcoal, for blow pipe experiments (sold, in square pieces, by Chemical Apparatus makers); a blow pipe and a spirit lamp.

A small globular glass bottle, of about 4 ounces capacity, such as are sold as suitable for boiling Acid over a spirit lamp; or a large test tube.

A couple of ounces of Nitric Acid; a little Sulphuric Acid, and a few pieces of Zinc; a glass vessel or tumbler, and a small flat dish, or common saucer.

Our first object is to produce a piece of *parting metal*, which is done by means of the blow pipe. Hollow out a small portion of the charcoal, and place the sixpence with the bit of Gold on it in the little cavity made. Then, with the blowpipe, direct the flame on to the charcoal support under it. When, after a few seconds, the coal begins to burn brightly, blow more strongly, so as to get it to a white heat. If you are no great adept at the blow pipe, endeavour to get somebody else to assist you, with a second spirit lamp and another blow pipe. As soon as the right heat is reached, say in one or two minutes, the Coin, &c. will fuse and drop into the hollow burnt into the charcoal; keep up the heat a little longer, until the molten drop begins to be slightly agitated; then let it cool.

Now it is very likely that with so small a quantity of metal an equal distribution of the Gold with the Silver has not taken place. Therefore, when the piece is cool, beat it out with a hammer, boldly flattening it down to as thin a piece as you can. Break or fold up

this flat piece, beating it again, as much as you like, into flats or splinters; collect the fragments, and put them once more on the charcoal, melting them down a second time. You may then assume that the Gold is better distributed through the mass, and that you have now a lump fairly representing *parting* metal. Instead of granulating it, as is done in large masses, beat it out again as flat as possible, and break or cut it up into as many little bits as you can,—which will represent *grains*.

Place the bits into the little glass vessel or test tube, and pour an ounce of Nitric Acid over them. Holding the bottle or test tube by the neck, gently swing it over the spirit flame, to prevent its breaking by a too sudden application of heat, until you can bring it into closer contact with the flame. The Acid will soon become agitated, and emit pungent reddish brown fumes; continue the boiling until you see that the pieces are dissolved, leaving only a few dark grains at the bottom. The Acid has probably become dirty blue, through the Copper in the sixpence. Pour it off carefully into a glass, and if the pieces do not appear sufficiently dissolved, after the bottle has cooled, pour in a little more Acid, and boil again, afterwards adding the second Acid to the first portion already put aside.

The bottle, with the dark grains and the remaining traces of Acid at the bottom, having cooled, introduce water copiously several times, so as to wash the grains. Then turn them out on a piece of blotting paper, pick them up with the blade of a knife, upon which you

may gently dry them over the spirit flame. They are pure Gold.

The Acid containing the Silver you may then dilute with four times its volume of water, in a large tumbler. Make about half a tumbler full of solution of salt in water, and gradually introduce this into the Acid. The thick cream-like deposit of the Chloride of Silver will instantly form, and will only cease to form when you have poured in the right quantity of salt water. Then stir the fluid with a glass rod, and leave it to settle. When the upper part of the fluid has become clear, introduce a few more drops of the salt water, and watch whether they will still produce traces of slowly subsiding white flakes; if not, then all the Silver is already precipitated. Decant the supernatant fluid, and wash the Chloride of Silver repeatedly, by filling up the glass several times with water, always taking care to let the Chloride settle down well before you pour off the water. Then turn the Chloride out into the flat dish or saucer, cover it with a mixture of Sulphuric Acid and Water (say fifteen parts Water and one part Acid), and distribute some chips of Zinc (cut off from Zinc sheeting) over it. The action commences at once, and the Chloride turns dirty and grey. When all the white has disappeared, which you can accelerate by stirring the pieces of Zinc about with a glass rod, you may pour off the solution, and wash the residue in several waters, taking finally the Zinc away. The residuary greyish powder is pure Silver, which may be drained on blotting paper, and dried upon the blade of a large

knife, or on a piece of Zinc plate held over the spirit flame.

The grains of Gold, mixed with a stiff paste of Gum Arabic to keep them together, may be fused by the blow pipe in a cavity of the Charcoal. The Silver powder, also mixed with a little wet Starch or stiff Gum for better adhesion, and rolled into a small lump, may, in the same manner, be melted down into a small button. Afterwards the bit of Gold, and the button of Silver, may be slightly flattened with a hammer, and rubbed bright to show their virgin colours.

We have often, in the space of half an hour, performed this experiment for the amusement of our friends.

When larger quantities, say four ounces (20s) worth of Silver, and three or four pounds worth of Gold are thus to be operated upon, the melting can be done in small crucibles, either in a jeweller's furnace, or, at a pinch, in a well-built coke fire in a common grate, with the diligent use of a pair of bellows to get the heat *white*. The metal may then be stirred with a hot iron wire or rod, and granulated in water. All the other apparatus for the Refining process must then be larger in proportion.

A small experiment with Sulphuric Acid may also be made upon a similar plan, following the general directions given in our description of Refining on a large scale.

CHAPTER XVII.

METHODS OF ASSAYING.

IN the regular order this chapter should have preceded the last. But, as Refining is simply Assaying on the largest scale, it was thought the better course to give, in the first place, a description of the outlines of the Process of Refining, as the most suitable introduction to the general description of the Methods of Assaying. In fact, if the reader has performed the little experiment just now described at the end of the last chapter, he has been truly making a kind of Assay; although, from want of experience, and in the absence of proper appliances, he has probably not been quite accurate enough in his manipulations.

Modern Science has brought the art of Assaying to a degree of perfection more than sufficient for all purposes of Bullion operations. It can readily be imagined that a subject involving so many nice and delicate operations has warmly engaged the attention of men of science, by whom it has been brought to its present high state of theoretical development; and that it has received also the best practical treatment at the hands of scientifically educated working Assayers.

Our readers will not expect, of course, to find here a complete and exhaustive scientific treatise on this subject; they will be satisfied, probably, if we succeed in making clear to them the leading points and features of Assaying.

We have already had occasion to state that, when Bars are to be Assayed, a small piece—one or two pennyweights for Gold, two to five pennyweights for Silver—is chipped off a corner, or cut from any part of the Bar; and that the pieces so taken from the different Bars are wrapped up separately in papers, which are marked each with the respective letter and number of the Bar, and sent to the Assay Office, where the *fineness* of the Metal is determined.

These small bits of Gold or Silver, weighing from one to five pennyweights each, are given to the Assayer as samples of blocks of Metal of 50 to 2,000 ounces weight. (Here we clearly see how indispensable it is that the Metals in the Bar should be most intimately and uniformly intermixed by careful remelting, so that a sample taken from any part of the Bar shall really and truly represent the entire Mass). The Assay pieces, therefore, represent only the $\frac{1}{1,000}$ th to $\frac{1}{8,000}$ th part of the actual weight of the block; yet the value of the entire Mass, almost to a penny exact, has to be ascertained by a chemical analysis of these very small fractions.

Now, one of the first things to occur to us, under these circumstances, is how desirable it must be to be able to weigh these very small pieces accurately to the

minutest fraction. This is accomplished by that triumph of the mechanical art,—the *Assay Scales*, which enable the Assayer to weigh to the twenty-thousandth part of the Assay piece.

A true *Assay scale* will carry a maximum of about 100 grains, and will turn distinctly with the $\frac{1}{1,000}$ th part of a grain. This beautiful instrument, looking like the ghost of a scale, so slender and delicately constructed is its framework, upon which a particle of dust would make an impression, is kept in a glass-case, one side of which lifts up, to enable the Assayer to introduce the objects to be weighed. For fear of getting troublesome specks of dust inside the case, the opening side is lifted but rarely, and even then only just sufficiently high to permit the introduction of the fine pincers, with which the weights and the objects to be weighed are passed into the pans of the scale. The Assay Balance is a beam scale, supported by a brass pillar; the pans are suspended from the ends by almost invisible pieces of wire. The beam is a pointed bar of Metal, very light, yet strong enough not to bend under the maximum load which the balance is constructed to carry. The tiny hard tempered steel points turn on Agate plates. A lever, affixed outside, enables the Assayer to raise and to lower the beam with the pans suspended from it; the pans, when in a state of rest, are supported on nicely arranged cushions.

The weights used in Assay weighing are little bits of round or square metal; or short pieces of fine Platinum wire, bent into various shapes; these pieces are

so small that it requires a magnifying glass to see them with any degree of distinctness.

Two small wire hooks, weighing the $\frac{1}{100}$ th part of a grain each, are suspended on graduated slides, affixed to the beam; by means of rods so arranged that they can be worked from outside the case. These *riders*, as they are called, can be shifted backwards and forwards on the beam, and, acting on the principle of the lever scale, they may thus between them show to the $\frac{1}{1000}$ th, or even $\frac{1}{1600}$ th part of a grain. The arrangement for working the rods from the outside enables the weigher to obtain this high degree of accuracy without lifting the glass shade; so that neither dust, nor even the movement of the air caused by his breathing, can affect the balance. Other balances are without this arrangement; yet they are, practically perhaps, just as serviceable.

To give a notion of the wonderful accuracy of an Assay Balance provided with riders as just now described, we may mention that a Balance of this kind will enable us to detect a difference in weight between two sovereigns to a fraction of $\frac{1}{500}$ th part of the value of a penny; so that, in calculating by weight one 1000 sovereigns worth of Gold against another 1000, this balance will give a return exact to $\frac{1}{2}$ d, which is far beyond what is necessary in the Bullion trade.

In ordinary Assaying operations an indication of the 1000th part of a grain gives an accuracy of weighing to the minute fraction of the $\frac{1}{1200}$ th part; which is amply sufficient for all practical purposes.

The Assay pieces sent in for analysis weigh from 24 to 48 grains for Gold, and from 48 to 120 grains for Silver. For a single Assay the Assayer uses only 12 grains of the metal; but the excess is required to enable him to make double or treble Assays when needed; also to give him an extra supply of substance in case of error. As the whole of the small pieces are afterwards returned to the owner, with the Assay paper, there is not, or there ought not to be, any loss of the more valuable part of the material.

The Assayer accordingly takes 12 grains Troy weight of the metal sent him to operate upon. His first business is to find out how much of these 12 grains is pure Gold, and how much Alloy. Supposing he finds, for instance, that out of 12 grains 11 are Gold, and one Alloy, he reports the fineness of the examined Assay piece as 22 carats out of 24, which, as we know, is the fineness of British Standard Gold. If the 12 grains hold $11\frac{1}{2}$ grains of Gold to $\frac{1}{2}$ grain of Alloy, the proportions are 23 in 24; or, as the Assay would report, Better 1 carat 0 gr. than Standard. If there are 10 grains of Gold, and 2 of Alloy, which makes 20 in 24, the Assay would report Worse 2 carats 0 gr. than Standard.

The 12 grains Troy are called the British *Assay Pound*; and each of the 12 grains represent 2 carats in the 24 carats. The grains of the Assay pound, for Gold, are divided into fractions, up to $\frac{1}{64}$ th of a grain. This gives the following corresponding proportions:—

Assay Pound.	Fineness.
12 grains =	24 carats
11 „ „	22 „
10 „ „	20 „
$2\frac{1}{2}$ „ „	5 „
1 grain „	2 „
$\frac{1}{2}$ „ „	1 carat
$\frac{1}{4}$ „ „	2 grains
$\frac{1}{8}$ „ „	1 grain
$\frac{1}{16}$ „ „	$\frac{1}{2}$ „
$\frac{1}{32}$ „ „	$\frac{1}{4}$ „
$\frac{1}{64}$ „ „	$\frac{1}{8}$ „

Thus, $\frac{1}{64}$ th of an Assay grain corresponds in fineness to a fraction of $\frac{1}{8}$ th carat grain, which is our smallest fraction in reporting Assays; whilst we are able to attain to $\frac{1}{1000}$ th grain in the actual weighing of an Assay, or to $\frac{1}{128}$ nd part of a carat grain.

For Silver the decimals of the Assay grains correspond to the number of pennyweights, as, *e.g.*

Assay Pound.	Fineness.
12 grains =	240 dwts.
11.100 „ „	222 „
5 „ „	100 „
0.500 „ „	10 „
0.250 „ „	5 „
0.050 „ „	1 „
0.025 „ „	$\frac{1}{2}$ „
0.012 $\frac{1}{2}$ „ „	$\frac{1}{4}$ „

The latter is the smallest fraction expressed in an

English Assay for Silver; but theoretically we may weigh to $\frac{1}{50}$ th dwt., or 0.001 fine.*

When we come to Assays of Silver containing traces of Gold, reported, say 5 or 10 or more grains of Gold per lb. Troy, we can weigh to half a grain. Thus, 1 lb. Troy is 12 oz., or 5760 grains or parts. The 12 grains of the Assay pound may be divided accordingly into 12,000 parts. This would give a less accurate result than the former; however, for such *parting Assays of Silver* the Assayers generally use a larger quantity than 12 grains of metal, so as to increase the chances of a more accurate result.

There are some English Assayers who do not bind themselves to the *Assay pound* and its sub-divisions. They use weights of their own; and they will make their Assay also upon pieces of more or less weight than twelve grains. In fact, it is much more convenient entirely to follow the decimal system, rather than deal with fractions of grains; and we believe that a great many English Assayers do so now. The weights and sub-divisions of weights which they use

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are of secondary importance, in so far as we are concerned; and in the Assayer's hands such weights, no matter what they happen to be, will answer every purpose, so long as they represent units and their minutest practicable sub-divisions.

From this description of the weighing system pursued in Assaying the reader may gather an idea of the minute accuracy of the method, which enables the Assayer to estimate from a small sample the exact value, or, at least, very nearly so, of a heavy Bar of Gold or Silver. The Assayer also uses a larger balance, in which he can weigh heavier pieces to $\frac{1}{100}$ th of a grain exact. With these larger scales he weighs off, in the first place, the several parts of twelve grains each which he requires for his Assays.

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Gold containing only Silver.

Silver containing only Gold.

Gold containing only Copper or other inferior Alloys.

Silver containing only Copper or other inferior Alloys.

Gold containing both Silver and Copper or other inferior Alloys instead of or in conjunction with the latter.

Silver containing both Gold and Copper or other inferior Alloys instead of or in conjunction with the latter.

There are two methods of Assaying, which, according to circumstances, are employed singly or jointly, viz. :—

The Assay BY ACID, and

The Assay BY CUPELLATION.

Assays by Acid, are made :—

For Gold containing only Silver.

For Silver containing only Gold.

Assays by Cupellation are made :—

For Silver containing only Copper or other inferior Alloys.

Assays, by Cupellation first, and Acid after, are made :—

For Gold containing only Copper or other inferior Alloys.

For Gold containing Silver and Copper or other inferior Alloys instead of or in conjunction with the latter.

For Silver containing Gold and Copper or other inferior Alloys instead of or in conjunction with the latter.

And in this order we shall describe them.*

* Silver Assays can also be made in another way, quite distinct from the above, viz., by the so-called *French* or *Wet Method of Assaying* Silver; a comparatively new process, of which we shall speak at the end of this chapter.

ASSAY BY ACID.—Our description of Refining (see last Chapter) states the principles upon which Gold and Silver can be parted, whether in large or in small quantities. Nitric Acid is the agent usually employed in Assaying by the humid way. The process of Refining (Assaying) small or minute quantities of the Precious Metals by this agent demands certain modifications of the apparatus and in the general manipulation, to suit the delicacy of the operation, and to ensure the utmost accuracy of the result.

For Gold containing Silver.—The Acid method is resorted to where it is positively known that the Assay piece contains only Gold and Silver. This is almost invariably the case with Bars melted from native Gold; the Assayer may derive his conviction on this point from the indications afforded by the known origin of the Bar. The Assay piece, before being subjected to the Acid, has first to pass through certain preliminary operations, similar to those required in Refining. The same as in Refining, in order to secure the efficacious working of the Acid, it is essential that there should be more Silver than Gold in the piece, in the proportion of three to one. This proportion is not found in native Gold; and it is accordingly necessary that Silver should be added to the Assay pieces to bring them up to the required standard.

The Assayer first determines, as nearly as practicable, the quality or fineness of the piece, either by the Touchstone, or by a rough preliminary Assay. Practised Assayers, who are in the habit of making a number of Assays every day, are frequently able to

judge pretty closely by the mere look of an Assay piece. Upon the Assayer's estimate of this, which may be taken to be pretty correct to twenty or thirty millièmes, he calculates the quantity of Silver required to be added.

The process is conducted as follows :—

Twelve grains (the Assay pound) are taken off the Assay piece, and weighed in the balance as accurately as it can possibly be done. A preliminary Assay shows the 12 grains to consist of

Say about 10 of Gold, and
2 of Silver.

Consequently, 28 grains of pure Silver must be added to the Assay piece, to bring the weight of the whole up to 40, being 30 of Silver, and
10 of Gold.

This addition of Silver to the Assay piece of Gold is called *Quartation*.

The forty grains of mixed metal are melted together; the inquartated *Button* obtained is flattened on an anvil, and annealed once or twice to soften it; it is then passed between rollers, so as to reduce it to a thin plate or ribbon, about $1\frac{1}{2}$ to $1\frac{3}{4}$ inches long, and about $\frac{1}{3}$ inch wide. In the rougher *wholesale* Refining process, as it may be termed, the Metal is *granulated*. In the Assay this rolling out into a fine ribbon has exactly the same effect, in so far as the exposing of a larger surface to the action of the Acid is concerned.

The *ribbon* is rolled up upon a quill, which gives it the shape of a short watch spring; the small spiral piece of Metal—the *Coronet*, as it is termed, is placed in a *glass matrass*, or retort, standing

on a hot sand bath, where pure Nitric Acid is then poured over it. It is now boiled for a quarter of an hour; after which the Acid is cautiously decanted, and fresh Acid poured over the Cornet in the Matrass, until all the Silver is dissolved. Three ounces of Acid are necessary for the first boiling; less afterwards, as the quantity of the Silver diminishes. The Acid is not used in its full strength; the first boiling is done with a mixture of 30 per cent. of pure Acid and 70 of Water (about 1.15 specific gravity, concentrated Nitric Acid being 1.50). The second boiling is effected in stronger Acid, about half concentrated Acid and half water: this really dissolves out the remaining Silver. Different Assayers have different ways, both as to the strength of the Acid and the time of boiling. A trace of Silver, from 1 to $1\frac{1}{2}$ *Millièmes*, is said always to remain with the Gold. As this is known to be the rule, allowance is made for the Silver remaining, which is called *Surcharge*. It is said, however, that a third boiling, conducted upon the plan of the French Assayers, clears off all the Silver.

When the whole of the *Silver* present has been removed as far as practicable, the Cornet, or spiral—which now appears of a red brown colour, and is very brittle from its honeycombed structure, resulting from the removal of the intersecting atoms of Silver, so that it requires the most delicate handling to guard against its breaking—is washed successively in hot and in cold distilled* water, and then heated in a small oven, to

* Distilled water must be used, as common river or pump water would precipitate small traces of Chloride of Silver in the cellular structure of the Cornet, and would thus render the Assay inaccurate.

anneal it. This operation causes it to contract slightly, and imparts to it a *dead* golden colour; but it still remains brittle, and an attempt to unwind it will break it to pieces.

However, the *Cornet* is now *pure Gold*.

Now, to make our calculation of the result of the Assay. We must remember that 12 grains were taken from the Assay piece, to which 28 grains of Silver were added, making in all 40 grains. Suppose the pure cornet, carefully weighed in the Assay balance, is found to weigh, say $9\frac{6}{8}\frac{3}{4}$ th grains. In this case $30\frac{1}{8}\frac{1}{4}$ th grains of Silver have been dissolved by the Acid; subtracting from this the 28 grains Silver added, we find that there were $2\frac{1}{8}\frac{1}{4}$ th grains of Silver in the 12 grains of the original metal.

In the Assay pound $9\frac{6}{8}\frac{3}{4}$ th grains are equal to 19 carats $3\frac{7}{8}$ grains in fineness: or Worse $2\cdot0\frac{1}{8}$ than Standard of 22, or 833 fine in *Millièmes*. The proportions assumed at starting were 10 Gold and 2 Silver; or W 2·0, or 834; the actual Assay has, therefore, turned out $\frac{1}{8}$ th grain, or 1 *Millième* worse than the estimate. The Silver of $2\frac{1}{8}\frac{1}{4}$ th grains in the 12 is equivalent to 962 gr. per pound Troy, or 40 pennyweights; and the Assay, as a *parting* Assay, would be reported,

Gold W $2\cdot0\frac{1}{8}$ gr.

Silver 40 pennyweights per 12 oz. of metal.

On comparing the process of Refining with this method of Assaying, it will be seen that, essentially, the chemical action is the same; but that in the Assaying the process is modified to suit the delicate nature of the operation.

Again, in Assaying, the same as in Refining, it is almost impossible to get completely rid of all the Silver; slight traces of it will remain, and there will accordingly always be a *surcharge* of Silver as stated before (which it is asserted, however, might be avoided by a third boiling with Acid). It is also found that the Gold is apt to waste a little. Sometimes the *surcharge* of Silver and the loss of Gold balance each other. These differences, no doubt, arise either from slight variations in the temperature, and from the actual condition of the Acid; or, perhaps, from atmospheric influences. Scientific men are not certain as to the true causes of these differences.

In order to make an *Assay* as perfect as possible when these conditions prevail, so-called Check Assays are made: a piece of 12 grains of Gold, known to be exactly Standard (22 carats), is melted together with the due proportion of Silver, and the *cornet* made with the mixed Metal is Assayed at precisely the same time, and with the same mixtures of Acid, and under the same temperature, as the Assay or Assays of the pieces to be examined.*

It is fair to assume, and practice has proved it to be a fact, that, whatever may cause the discrepancies mentioned, they will be the same in the several Assays thus conjunctly and simultaneously made. The Standard Cornet becomes in this case the actual Standard

* At the official trial of the English Gold Coinage, the so-called "trial of the Pyx," Assay pieces of certain "Standard plates of Gold" are used. These Standard plates are kept in Westminster Palace.

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portion of the other base metals ; and this action goes on until complete oxidisation of the Alloys is effected, and pure Silver and Gold alone are left.

Now comes the question,—“ How are the Oxidised Alloys removed, so as to leave the noble metals in a state of purity ?” Here the so-called *Cupel* performs its office. The *Cupel* is a small vessel, about two inches in diameter and one and a half inch high, concave inside, and in shape not unlike certain kinds of salt cellars. It looks as if it were made of earthenware. It is, however, made of *bone ash* (previously purified). Though of porous structure, it is a strong, fire-proof vessel, which has the remarkable property of allowing fused Litharge (and other Oxides in a state of fusion) to soak into its substance as water will into blotting paper, whilst it is impermeable to metallic particles.

Suppose we have the following mixture heating in a Cupel :—

Lead	.	.	.	.	.	22 parts
Copper	.	.	.	.	.	2 parts
Tin	.	.	.	.	.	1 part

Not alone will the Lead, converted into Litharge in a state of fusion, sink into the Cupel, but it will assist also in forming the fusible Oxides of Copper and Tin, which will equally soak into the substance of the Cupel. If, in addition to the Lead, Copper, and Tin, Silver and Gold are present, say in the proportion of three of the former to one of the latter, these two Precious Metals, resisting the Oxidising influences to which the baser Alloys have to yield, will not sink into

the Cupel, but remain behind, in a state of fusion, at the bottom of the Cupel.

For Silver containing only Copper or other base Alloys.—In these Assays it is taken for granted that no Gold is present. The Silver may contain Copper, or Lead, or other metals, in larger or smaller proportions. The process remains pretty much the same, whether the Silver is 600, 700, 800, or nearly 1,000 fine.

A sample of 12 Troy grains (equal to the Assay pound) of the Metallic Alloy is accurately weighed. Let us suppose this sample to be about 950 fine, and the 50 parts remaining to be partly Copper, partly Lead. To make the Cupellation succeed properly, a quantity of pure Lead, at least *five times* the weight of the Assay piece, must be added to it.

The quantity of Lead to be added varies according to the presumed fineness of the Silver, and the proportion of Copper present in the Alloy. Copper has a great affinity for Silver, which protects it, in a measure, against the action of Oxygen; and, as a rule, it requires 15 parts of Lead to carry off one part of Copper. An expert Assayer knows by experience what is required, according to the supposed fineness of the Silver Alloy; a moderate excess of Lead is not prejudicial to the success of the Assay.

The process is conducted as follows:—

The twelve grains of the Silver Alloy, carefully weighed in the Assay scales, are charged into the Cupel, and sixty grains of pure Lead added. Frequently the Lead is put in first, and allowed to melt in the

Cupel, and the Silver Alloy, wrapped up in a slip of Lead foil, is dropped into the molten Lead bath after.

The Cupel is placed inside a *Muffle*. This is made of fire clay, in the form of an arch, with a flat bottom; it is about six inches long, by four wide, and four inches high; it is open at both ends, and the arch over the Cupel is perforated so as to let the atmospheric air circulate freely inside.

The *Muffle* stands in the *Furnace*. Assay Furnaces are made of all sizes, capable of holding from one to twenty Muffles or more. They are heated with coke or charcoal, and a strong draught is required, both for the bright burning of the fuel and the current of air, which, when the formation of the Litharge begins, is required to play upon the molten metal bath in the Cupel.

The Muffle, with the Cupel in it, is gradually heated to redness in the closed furnace, which is then opened, and the Assay is charged into the Cupel. As soon as the Metal is in full fusion, presenting a smooth convex surface to the eye, air is freely admitted, which, getting heated on its passage to the Cupel, at once begins to oxidise the Lead. The metallic bath shines very brightly, a scum forms on the surface, where it flits about, apparently moving towards the sides of the Cupel. This is the fused Litharge. As the temperature increases to white heat, fumes of Lead rise; and the movements on the surface increase in rapidity, the molten metal presenting a continual succession and alternation of films of Oxide forming on the surface, clearing away and forming afresh. These films con-

sist of the Litharge, and the Oxides of the baser Alloys formed under the Oxidising influence of the latter.

The quantity of the metal in the Cupel now begins to diminish fast, until at last all the Lead and the other base Alloys are gone. At the moment of the final disappearance of the last traces of the Lead, the Silver button seems to make a rapid movement: it brightens for an instant, shining very lustrously, after which it settles down quietly at the bottom of the Cupel,—*a bead or button of pure Silver.*

The Cupel is now allowed to cool, the hard button of Silver is taken out with a pair of pincers, cleaned from any traces of glassy Oxides occasionally adhering to it, and then weighed.

In this case we have presumed the Silver to be about 950 fine. Suppose the button is found to weigh 11·35 grains Troy. The original weight before Assaying being twelve grains, the result is reported, in the British Assay, 227 dwts., or B 5 dwts.—equal to 945·833 in millièmes. The Assay consequently has turned out below the estimate.

Although the principle upon which these Assays are based—the oxidation of the baser metals, and the non-oxidation of the Silver—is quite correct, yet it will nevertheless frequently occur—from overheating, or from other causes over which the Assayer has seemingly no control—that traces of Silver are carried off with the Litharge. This, of course, leads to inaccuracy in the result of the Assay. In order to adjust errors arising from these causes, *Check Assays* are

made, on the same system as explained under the head of Assays of Gold by Acid. A piece of Standard Silver, of twelve grains weight, is Cupelled, in the ordinary way, in the same Muffle, and simultaneously with the Assay piece or pieces; it is thus exposed to exactly the same degree of heat as the latter, and operated upon under the same conditions. If the Standard piece, after Cupellation, weighs exactly 11.1 grains (or 222 dwts. fine), then no loss has taken place in the Assay; but if it weighs 11.075, or 11.025, then it is fair to assume that the same fractions have been lost in all the other pieces, and the fineness of the latter can be computed accordingly.

For Gold containing only Copper or other base Alloys.
—Gold which contains Copper can be Cupelled in the same manner as Silver; it can bear a much higher degree of heat than the latter Metal. Very large quantities of Lead are required in the process, to overcome the resistance of the Copper to oxidation, as that Metal has a very strong affinity for Gold. But even with large quantities of Lead the process is uncertain. It has been found that Silver lessens the affinity between Copper and Gold, and that the addition of Silver to the Assay piece, in the proportion of three parts to one part of Gold, will bring about the ready removal of the Copper by Cupellation. This proportion of three of Silver to one of Gold is the same as used in Refining and in *Quartation* in Assays by Acid.

Besides, Gold, unless specially composed of only

fine Gold and fine Copper, generally contains Silver, which cannot be parted from it by Cupellation.

It is therefore expedient in cases where Gold alloyed with baser Metals is to be Assayed, to *Quartate* the twelve grains of the Assay piece at once with thirty-six grains of pure Silver (or thereabout, according to the supposed quality of the Gold).

This gives a total of forty-eight grains, with three-fourths of Silver in it. The mixture is Cupelled in the same way as just now described; the *button* finally resulting consists of Silver and Gold alone.

Let us suppose the Gold in the Assay piece to be about 750 fine, the balance consisting of 84 parts of Silver and 166 of baser Alloy; to the 12 grains of this Assay piece 36 grains of Silver are added, making in all 48 grains. *After Cupellation* the button ought to weigh 46 grains. Namely—

For the Gold in the Assay piece	.	9	grains
For the 84 parts of Silver	. .	1	„
For the Silver added	. . .	36	„
		46	„

The two grains wanting to make up the original weight of the Quartated Assay piece are accounted for by the 166 parts of baser Alloy, oxidised in the Cupellation.

The bead or button of the 46 grains of Gold and Silver is then Assayed by Acid. The piece is flattened, and laminated into a thin plate or ribbon, which is rolled into a *cornet*, and boiled in Nitric

Acid, in the same way as previously described. When all the Silver has been dissolved out, there should be left nine grains of pure Gold; which corresponds to a fineness of 750 in Millièmes in the original Assay piece. Thus we have here Assays by Cupellation and by Acid combined.

For Gold containing Silver and Copper or other base Alloys. — Alloys of this kind are Assayed in precisely the same way as just described, by Cupellation first and by Acid after. We know in such cases that Silver is present, and our object is not only to ascertain the fineness of the Gold, but also the quantity of Silver in the Assay piece.

The Assay piece of twelve grains is accordingly at once *Quartated* with Silver, the Mixture Cupelled, and the Silver and Gold *Cornet* treated with Nitric Acid.

Let us suppose the Gold in the Assay piece to be 800 fine, with 140 parts of Silver and 60 of Copper or other Alloy. To twelve grains of it, accurately weighed, 36 grains of Silver are added, making 48 grains in all. After Cupellation, the piece should weigh 47·28 grains, namely :—

For the Gold in the Assay piece . . .	9·60
For the Silver added	36·00
For the Silver originally present . . .	1·68

47·28 grains

The 0·72 grain wanted to make up the original weight of the *Quartated* Assay piece being the baser Alloy oxidised and absorbed into the Cupel.

Assayed by Acid the piece of 47·28 grains ought to give

For the Gold	.	.	9·60 grains
For the Silver	.	.	37·68 „
Less Silver added	.	.	36·00 „

1·68 grain for the Silver

originally present in the Assay piece.

The report for 9·60 grains Gold in 12 grains is 800 in millièmes ; for 1·68 grains Silver=140 millièmes. The British Assay would therefore be

For the Gold W $2\frac{3}{4}$

For the Silver $33\frac{1}{2}$ dwts. per lb. Troy.

For Silver containing Gold and Copper or other base Alloys.—The process is again the same ; only in these cases there is no need for *Quartation*, the Silver being already present largely in excess.

Heavier Assay pieces are taken, say 48 grains instead of 12, that the traces of Gold left in the matrass may be more clearly perceptible.

Supposing a Silver Assay of this kind to be 600 fine, the balance being 12 parts of Gold and 388 parts of base Alloy.

Forty-eight grains ought then to weigh, after
Cupellation 29·376 grains

viz.,

For 600 fine Silver	.	.	.	28·800 „
For 12 Gold	.	.	.	00·576 „

which is, in British Report,

Silver W 78 dwts.

Gold $69\frac{1}{8}$ grains per lb. Troy.

Assays made solely to ascertain the fine weight of Gold, or the fine weight of Silver, are called *ordinary Assays*.

Assays made for the purpose of determining the relative proportions of Gold and Silver, or of Silver and Gold, are called *parting Assays*.

The liability to error in Assays of all kinds may be very much lessened by making double or treble Assays. The Assayer is generally instructed to make double Assays; for the Bank of England treble Assays are made.

One Assayer may be effectively checked by another, to whom a second piece of the same Bar is sent. If the two Assays differ, which is, however, very seldom the case, another set of Assays can be made. Should these differ again, the fault may be in the bad melting, and in the irregular distribution of the metals in the Bar; in which case the Bar should be remelted and Assayed again. Finally, if this does not answer, the whole Bar should be Refined, to obtain the correct quantities. Such difficulties occur very seldom indeed; we simply allude to them here in order to show that the principle of correctness can be carried out in any case.

THE WET METHOD OF ASSAYING SILVER
(*Process of Assaying Silver by the Humid Way*).—In France a method of assaying Silver has been perfected of late years, altogether distinct from the process of Cupellation. French Assayers use it extensively. English Assayers do not as yet seem to favour it much.

Silver alone (including as a matter of course *Doré* Silver) is Assayed by this method.

The principle upon which the Assay is based is this:—The Assay piece is dissolved in Nitric Acid, which converts the Silver in it into Nitrate of Silver in solution. The solution is precipitated by common Salt (Chloride of Sodium), which throws down the Silver as Chloride, thus enabling the Assayer to determine, from the quantity of the precipitate obtained, the fineness of the Silver in the Assay piece.

We have before this had occasion to state that Nitrate of Silver in contact with Chloride of Sodium (Common Salt) is converted into Chloride of Silver, and the Salt into Nitrate of Soda.

It might be suggested here that the Chloride of Silver precipitate produced from, say twelve grains of Assay, might be separated, reduced to pure Silver by Zinc and diluted Sulphuric Acid, and weighed. This might indeed be done, although not with all desirable accuracy; but, as will be seen a little further on, there is no necessity for this somewhat complicated course of proceeding.

The Salts of the Metals in a state of purity always consist of certain fixed proportions of an Oxide of the Metal and an Acid; there is never the slightest variation in the per cental proportion of each element present. A certain fixed quantity of pure Nitric Acid will take up a corresponding weight of pure Silver; if there is less Acid than required, some of the Silver will remain undissolved. If there is too much Acid, the surplus will remain uncharged with Silver. In

the same way Chlorine combines with Silver in proportions always rigorously the same. A certain fixed quantity of Nitrate of Silver will thus be decomposed by its equivalent proportion of Common Salt. Where the proportions of the Nitrate and Chloride are strictly equivalent, there is neither Nitrate of Silver nor Chloride of Sodium left in the mixed solution of the two; but where this is not the case, the excess of the preponderating salt remains in the solution, and its quantity may be accurately determined by a simple chemical process.

The reader may make an experiment. Dissolve a piece of Silver in Nitric Acid; or, better still, purchase from a chemist a quarter of an ounce of crystallised Nitrate of Silver. Place this in a tumbler, and pour distilled water over it; when dissolved, put about one-third or one-fourth of the contents into a second tumbler, to be kept in reserve. Dissolve half an ounce of Common Salt in a third tumbler, reserving a portion of this Salt solution also in a fourth tumbler. Place tumblers numbers one and three alongside each other, and gradually add some of the Salt solution to the Silver solution. A thick white precipitate of Chloride of Silver will form at once. Agitate the contents of the first tumbler, then allow them to settle down. As soon as the supernatant liquid is clear again, add a fresh portion of the Salt solution; the same white Deposit will probably form again, though not so copiously as before. Further additions of Salt solution may produce but a slight result, until finally no more white flakes are formed.

Now, to try whether the Nitrate of Silver and the Chloride of Sodium have really been mixed together in exactly corresponding combining proportions you need only throw a few drops of the clear supernatant liquid into tumblers numbers two and four, which hold the reserved Silver and Salt solutions; no precipitate ought to be produced in either. But if in tumbler number two—holding the reserved Silver solution—a precipitate is formed, this is a proof that the solution in the first tumbler contains an excess of Salt, and accordingly that too much Salt has been used; if the deposit takes place in tumbler number four, holding the Salt solution—this is a proof that there remains still undecomposed Nitrate of Silver in the original mixture.

This little experiment illustrates the principle upon which Silver Assays may be made by volumetrical analysis, with a *Normal* or *Standard Solution* of Salt, and controlled by means of a *Normal* or *Standard Silver Solution*.

The apparatus used in the process must be constructed with the utmost nicety, so as to meet all requirements of convenience and accuracy. The Salt must be chemically pure Chloride of Sodium; the Water used pure distilled Water. The temperature must remain uniform throughout, or where there are variations in it, the results of the Assay must be corrected for these variations.

The process is conducted as follows:—

*One gramme** of the Silver Assay piece is accurately

* As the process is French, it is only proper that we should use French weights and terms in our description of it.

weighed off; which is the only weighing operation required in the process.

This is dissolved in pure Nitric Acid, and the Solution—diluted with distilled water, so as to give exactly one *litre*, or 1,000 *cubic centimetres* of liquid—is put into a suitable white glass bottle, which it fills about half.

The neck of the bottle is placed under the *Pipette*, suspended above it, supported by a stand. The *Pipette* is a hollow glass cylinder, terminating at both ends in elongated necks with fine orifices or openings. Both ends are furnished with stop cocks; but the flow of the solution with which the *Pipette* is charged can also be stopped or regulated, drop by drop, by closing the upper orifice with the fore finger. The *Pipette* contains the *Decime Standard Solution of pure Salt*.

The *Salt Solution* is carefully made beforehand, and kept in well-stoppered flasks, to guard it from loss by evaporation. The solution is made accurately of such strength that 1,000 cubic centimetres of it will precipitate exactly one gramme of pure Silver, neither more nor less. The *Salt Solution*, like the *Silver Solution*, thus measures exactly one litre (equal to 1,000 cubic centimetres). The original volume of the two so-called Standard or Normal Solutions is only 100 cubic centimetres each; but when they are wanted for use, they are first turned into so-called *Decime Solutions*, by the addition of nine parts of water.

When required for an Assay, the *Decime Salt Solution* is put into the *Pipette*, which has engraved upon it a graduated scale, divided into 1,000 centi-

metres (with decimals indicating to $\frac{1}{10000}$ th part); so that when full, the surface of the liquid touches 0 on the scale; when half full, 500, &c. The operator can thus read off to a small fraction how much of the Salt Solution he has discharged from the Pipette.

Now, if the one gramme of Silver contained in the 1,000 centimetres of the Decime Silver Solution is pure Metal, it will exactly take the 1,000 centimetres of the Decime Salt Solution to precipitate the Silver; if the Metal is only 950 fine, it will take 950 parts of Salt Solution; if 600 fine, only 600 parts of the Salt Solution will be necessary; and, provided the neutralisation point can be fixed with unerring certainty, nothing can be more simple than this operation.

Supposing it is known, from a preliminary Assay, or from experience, that the piece of Silver is from 800 to 850 fine. The operator may then at once discharge into the flask which holds the Assay piece in Nitric Acid Solution 800 parts of Salt Solution from the *Pipette*. The Chloride of Silver forms copiously, the flask is well shaken, and when the Deposit has settled, and the supernatant liquid is clear and at rest again, a further addition of Salt Solution is made, but this time cautiously, and drop by drop, so long as a precipitate continues to form; the bottle is occasionally shaken during the progress of this operation. Suppose the Assayer has thus discharged from the *Pipette* twenty-four centimetres more, the precipitate forming upon the addition of every fresh drop getting fainter and fainter, and failing altogether to make its appearance upon the addition of

the twenty-fifth centimetre : in that case the *Pipette* will show that 825 parts of the Solution originally contained in it are gone ; the Silver is, consequently, 825 fine.

The Assayer may, however, in order to make sure that there is really no more Silver left to precipitate, have discharged 826 or 828 centimetres of the Salt Solution, and he may thus have created an error, in which case there will be a slight excess of Salt in the Silver bottle which has to be removed. This is effected by placing the bottle under another *Pipette*, which, instead of a Decime Standard Solution of Salt, contains a *Decime Standard Solution of Nitrate of Silver*. This Silver Solution, being added very cautiously, drop by drop, will now in its turn form a precipitate with the Excess of the Salt ; two or three centimetres will, of course, under the circumstances here assumed, suffice to throw down the Excess of the Salt, and thus to correct the error created by the over-addition of Salt Solution. If the Assayer has found, accordingly, in the first instance, that 825 Cubic Centimetres of his Salt Solution were gone from the *Pipette* when the formation of a precipitate ceased, and had continued, nevertheless, to discharge two or three Cubic Centimetres more, he should now again at 825 find neither Nitrate of Silver nor Chloride of Sodium in the Assay Solution.

A higher degree of accuracy may be attained, and a more efficient check applied, by double or treble Assays, as in Cupellation. A second Assay, for instance, may be made by discharging the 1,000

centimetres of Salt water at once from the Pipette into the Assay Solution. The Silver being 825 fine, there ought to be an excess of 175 Salt. This can be tested by the Standard Solution of Silver, and re-tested by the Standard Solution of Salt. The operation in this case is the reverse from the former ; it ought to give accurate results, as the estimate can actually be made exact to $\frac{1}{10000}$ th part.

The base Alloys—Copper, &c.—present in such Silver Assays cause no inconvenience, except in so far as they tinge the Nitrate of Silver Solution; but they are not precipitated by Solution of Salt. Mercury, however, is precipitated by Chlorine ; therefore, if this Metal is present, the mercurial precipitate has, of course, to be separated afterwards from the Chloride of Silver ; which is a great drawback.

For Doré Silver the process answers very well; the Gold being of course left behind, as usual, upon the Solution of the Silver Assay in Nitric Acid.

The practical Assayer will, no doubt, find our description of the process of Assaying insufficient, as there are many technical points which require special instruction ; the ordinary reader, however, may be satisfied with the outlines which we have given of this simple and ingenious method of Assaying Silver.

CHAPTER XVIII.

IRIDIUM, AND BRITTLENESS IN BULLION.

A GOLD Assay may at times come back from the Assay Office, marked *Iridium*; or a Silver Assay, with the word *Brittle* written across it. This is a very annoying result to the Bullion dealer, for he loses $\frac{1}{4}$ d per ounce on the Gold, and $\frac{3}{8}$ d per ounce on the Silver; these being the Refiner's charges for purifying the Gold, and rendering the Silver malleable. Besides this, the Bars so marked are thrown out of the batch, and have to be sold separately by the Bullion broker.

Iridium is found mostly in crude Platinum, either in alligation with the latter Metal, or as a native Alloy of Iridium and Osmium, another Metal of the same group; it is occasionally found also in native Gold. Iridium is the most refractory Metal known, fusing only with great difficulty before the oxy-hydrogen blowpipe; it resists the action of all Acids, even of *Aqua Regia*, except in Alloys with a large excess of Platinum. It is oxidised, however, by fusion with Nitre, and by ignition to redness in the air. It is a white or Steel grey, brittle Metal; in hardness it almost equals the Diamond. Where native Gold

happens to be Alloyed with Iridium, the latter will not fuse with the Gold; but its hard, sharp, occasionally crystalline grains will be found mechanically disseminated through the Bar. Its presence in Gold is a great inconvenience to the Mint, as its hard sharp points injure the Steel dies (though made of the hardest Steel) to such an extent as to render them useless in a short time. The Mint and the Bank of England are therefore compelled to reject all Bars reported as containing *Iridium*.

Gold is freed from Iridium generally in the following way:—

The Gold and Iridium Alloy is melted together with the proper quantity of Silver (the usual *Refining* proportion), to reduce the specific gravity of the Gold sufficiently to cause the unfused particles of Iridium to subside to the bottom of the molten mass. Iridium has a specific gravity of 18·6, nearly approaching that of Gold, which is 19·3; so that it requires the addition of three parts of Silver (sp. gr. 10·5) to one of the Gold and Iridium Alloy, to reduce the specific gravity of the mass to about 13, which will permit the Iridium particles to subside to the bottom. When the mass is in fusion, the melter stirs the liquid Metal; after which he lets it rest awhile, then pours the greater part of the contents of the crucible off into Bars, and puts aside the residue left at the bottom of the crucible. This residue contains the grains of Iridium. The residues of several meltings may afterwards be remelted together, to remove an additional quantity of Gold from the Iridium. The last residue is dissolved in

Nitro-Muriatic Acid, which forms with the Gold the Chloride of that Metal, leaving the insoluble Iridium behind. The Gold is then finally precipitated from this solution by Sulphate of Protoxide of Iron.

The charge for removing Iridium from Gold is $\frac{1}{4}$ d per ounce in London; that is to say, the Refiner buys Gold Bars containing Iridium with an allowance of $\frac{1}{4}$ d on the price per ounce.

We believe that, owing to the irregular dissemination of the Iridium, Assayers are not in a position to pronounce an authoritative opinion respecting the proportion in which that impurity may be present in a Gold Assay; they stop short at its detection in the Assay Cornet; and small traces of it in a Gold Bar will often altogether escape detection.

Brittleness in Silver renders that Metal, as the term clearly expresses, too hard and brittle for coining purposes. A blow with a hammer will shiver a brittle bit of Silver into pieces, whilst the soft Metal can be beaten out easily into a thin plate. This brittleness is caused by the presence of Lead, Antimony, Arsenic and Mercury. The Mercury, however, will generally evaporate during the re-melting; but Lead and the other base Metals can only be got rid of by a process similar to Cupellation, which has been described in the Chapter on Assaying. The Bar is melted together with an additional quantity of Lead, in a reverberatory furnace, in a large Cupel made of bone ash; upon the free admission of air the Litharge forms, oxidising and carrying off at the same

time the obnoxious Alloys, and leaving the Silver pure and soft.

The reduction of Brittle into Soft Silver, in London, costs $\frac{3}{8}$ d per ounce, or about $\frac{5}{8}$ ths per cent. on the value of the Silver. Considering that Bullion shippers are content with from $\frac{1}{8}$ d or $\frac{1}{4}$ d gain per ounce, a few *Brittle Bars* in a shipment will take a large slice out of the profits of the transaction.

Sometimes Gold of very low title is Brittle. Presence of Mercury also will impart this most undesirable defect to Gold; this, however, matters but little, as the Mercury is driven off by the heat of the melting process.

CHAPTER XIX.

THE BULLION OFFICE AT THE BANK OF ENGLAND.

THE Bullion Office at the Bank of England is situated in the glass-covered court, entered from the Lothbury side. Several strong gates guard the entrance; and a couple of Bank Porters, in their official gowns and hats, keep watch over it.

The words "Bullion Office" are written over an unpretending-looking doorway. Entering through this, there is a compartment to the left, specially appointed for *Gold*, another to the right, specially appointed for *Silver*. The interior of the Bullion Office, with its vaulted roof, is very plain, and looks rather bare; scales, weights, and a few desks, being the only articles of furniture in it. At the rear there are frowning arches, into which Porters may, now and then, be seen to enter with hand-trucks, laden with shining Gold Bars, or bags of coin, or heavy boxes containing Silver; or they may emerge from thence carrying bars, for which a recipient is waiting at the counter. These arches lead to the vaults of the Bank, where the great store of Bullion is kept.

The gentlemen employed in the Bullion Office attend to all this in-coming and out-going treasure,

without the least signs of exaltation or excitement; on the contrary, they look perfectly cool, collected, and unconcerned, and are most prompt and business-like in their acts and proceedings. They take good care of King Mammon, with whom they are evidently on quite a familiar footing; whilst, at the same time, in their own quiet manner, they are polite, attentive, and obliging to their customers.

The number of Houses dealing with the Bank regularly is not large; and the names of the principal Refiners, Bullion Merchants, and Bullion Brokers, are as Household Words in the Bullion Court. It does not often happen that strangers do business direct with the Office.

Suppose a stranger unacquainted with the *modus operandi* comes to the Bank, and offers Gold Bars for sale; he will be told, at the Bullion Office, that these Bars must first be re-melted, by the authorised Bank melters. The addresses of these being given him, he must proceed to one of them, to have the Bars re-melted. The Bars are there cast into what is called the *Bank of England shape*—as near to 200 ounces weight as practicable, but not above that weight; they are then marked with the melter's stamp, and such letters or numbers as the seller may desire. They may now be taken back to the Bullion Office.

Here they are weighed in the Gold scales, the mark and weight of each Bar being called out for mutual noting. The Porters then cut off the Assay pieces, after which the Bars are trucked into the vaults. If an advance of money be there and then required, the chief

of the office, roughly estimating the fineness and value of the Gold from the appearance of the Bars, will authorise a payment on account, to within 5 to 10 per cent. of such estimated value, and issue his order, which is paid in Notes in the Issue Department.

A day or a couple of days after the Assays come in, and the account is got ready. The calculations are verified, the balance due is settled and paid, and the transaction is closed. The seller pays for the Assays (always treble Assays), but the Bank takes the Bars at their full weight before the Assays are cut off, which the Bank keeps, of course.

When the Bank is asked to *sell* Gold, the amount wanted by the purchaser is stated, and Bars, to as near the amount required as is practicable, are selected. As these are all Assayed, the account is made out at once, and the Bars, together with the Assay pieces and papers, are handed over against payment in Notes, which must first be taken to the Issue Department to be verified and marked as good. The actual weight of the Bars is then less than stated, the Assay pieces being cut off; but as these are given up with the Bars, there is no loss upon the purchases. The Bank, at all events, does not make any profit on the Assay pieces, as has been erroneously stated by Mr. Nicholson in his remarks on the Bank of England.

The Bank of England buys the following descriptions of Foreign Coin without re-melting :—

Russian Imperials,
United States Eagles, and
French Napoleons d'Or.

The ascertained uniform quality of these Coins enables the Bank to purchase them per ounce, at the following rates :—

Imperials . . . 77s 7½d per ounce (917 fine).

Eagles 76s 2¾d „ „ (900 fine).

Napoleons . . 76s 2¼d „ „ (900 fine).

The Bank resells these pieces (provided they are in stock) at—

77s 11d for Imperials, per ounce.

76s 6½d „ Eagles „ „

76s 7d „ Napoleons „ „

It has already been stated that the Bank of England does not buy Silver Bullion ; but we believe that advances can be obtained upon the deposit of Silver Bars or Specie.

The Bullion Office of the Bank of England renders other important services to the Bankers and Merchants of London. The shipments of Bullion arriving in this country from the West Indies, America, Australia, &c., in the ports of London, Liverpool, Southampton, &c. are all delivered, conformably to a general direction in the Bills of Lading, at the Bank of England.*

Before this arrangement was made the delivery of Bullion on the crowded docks and wharves to a number of different consignees was very inconvenient and dangerous.

* The only exceptions to this rule are the Bullion shipments from the Continent, which are generally delivered at once by the respective Shipping Agents or Carriers, according to the directions given by the Consignees.

Now these shipments, some of them of many hundreds of heavy packages, are taken at once for safety to the Bullion Office, where they are assorted; a day or two after, they are delivered to the holders of the Bills of Lading.

Thus, when a West India Mail Steam Ship arrives, with a cargo worth some two or three millions Dollars on board, consisting of a few small packages of Precious Stones, a number of Gold boxes, of all sizes and shapes, and a large quantity of Mexican *Bultos*, containing Silver Dollars, Lothbury may at times be seen lined, on the Bank side, with a number of vans waiting to enter the Court. These vans do not look as if they were heavily laden—at least, their loads are not likely to attract attention by their bulkiness; but those who know what is under the tarpaulin are aware that there lies heavy treasure at the bottom of the van, though scarcely rising a foot high above it; and the efforts of the horses when the vehicle is to be moved show that there must be some four or five tons weight in each van.

The arrival of the West India Packet makes it a busy time at the Bullion Office, twice a month. The gentlemen of the Department have to bestir themselves to brisk action at these periods; as the Bank undertakes, for a small consideration, the verification and the weighing of the Silver; and many houses avail themselves of this facility. The weighing of many hundred thousands of Dollars is not a pleasant task. The continual rattle of the Coins, as the porters shoot them from their original packing into the Copper

pans of the scales and put them back again; the steadiness required in the operation, combined with the rapidity with which it has to be conducted—for money cannot afford to wait long—are trying. The Dust raised — partly consisting of atoms of Silver—covers the coats and irritates the throat; and altogether, although Silver Dollars must certainly be a most respectable and pleasing article to handle, the duty is severe.

To the right of the entrance to the Bullion Office, the Packing Rooms are situated. A store of strong iron-bound boxes is kept on hand here; and the porters at the Bank undertake, for a small charge, the packing of the Bullion and the marking of the boxes for the Public. The marks and numbers are cut into the lid or the side of the boxes by a chisel, so that they cannot be altered on the way without detection. Over the joints of the boxes round holes are counter-sunk, into which sealing wax is poured, to receive the impression of the sender's seal. The arrangements altogether are thoroughly practical, and deserve the highest commendation; and, on the whole, there are few things more satisfactory in business than dealing with the Bullion Office of the Bank of England.

On the other side we give a copy of the Annual Return published by the Bank of England of the movements of Bullion. The year in question, 1865, was not a very brilliant one for commerce; but 1866 was worse; whilst 1867 was rather above the average of imports of Gold Bullion to the Bank.

BULLION.

RETURN to an Order of the Honourable The House of Commons, dated 16th February 1866 ;—for,

A RETURN "of the Amount of Bullion Purchased and Sold by the BANK OF ENGLAND, distinguishing GOLD from SILVER, and BAR GOLD from FOREIGN GOLD COIN, in each Month, from the 31st day of December 1864 to the 31st day of December 1865; also the Excess of Payments to, or Receipts from, the Public, of BRITISH GOLD COIN; and also, the Amount Received from the MINT during the same Period (in continuation of Parliamentary Paper, No. 76, of Session 1865)."

	BULLION PURCHASED.				BULLION SOLD.				BRITISH GOLD COIN.			
	GOLD.			SILVER.	GOLD.			SILVER.	Excess of Payments.	Excess of Receipts.	Received from the Mint.	
	Bar.	Foreign Coin.	Total.		Bar.	Foreign Coin.	Total.					
1865	£	£	£	£	£	£	£	£	£	£	£	
January	385,773	—	385,773	—	—	144,058	—	—	170,179	—	992,544	
February	85,685	—	85,685	—	—	—	—	—	—	329,214	701,000	
March	282,674	2,209	284,883	—	7,257	7,257	9,753	—	—	426,725	956,426	
April	201,149	7,765	208,914	—	5,926	3,827	9,753	—	831,528	—	210,300	
May	794,925	—	794,925	—	1,691	1,914	3,605	—	—	162,277	70,100	
June	416,287	3,135	419,422	—	2,558	2,558	2,558	—	—	24,944	—	
July	111,759	2,937	114,696	—	302,150	107,189	409,339	—	1,424,502	—	—	
August	528,792	3,573	532,365	—	12,823	943	13,766	—	593,008	—	—	
September	683,284	4,892	688,176	—	—	—	—	—	1,140,314	—	76,157	
October	1,305,051	13,287	1,318,338	—	7,981	—	7,981	—	1,928,062	—	—	
November	1,266,566	816	1,267,382	—	113,583	26,804	140,387	—	—	273,526	—	
December	1,719	2,447	4,166	—	655,073	221,708	876,781	—	370,917	—	350,500	
£.	6,063,654	41,061	6,104,725	—	1,253,100	362,385	1,615,485	—	6,458,410	1,216,686	3,357,027	

Bank of England, 28th February 1866.

W. MILLER, Chief Cashier.

CHAPTER XX.

BULLION BROKERS AND SHIPPING OF BULLION.

THE Bullion brokers in London do not confine their operations to the purchase and sale of Bullion ; but they undertake also the weighing, packing, and shipping of the same, and the making out the accounts.

When we speak of the *Bullion Market*, we use the term “Market” in the same commercial sense as applied to Gold and Silver as to any other commodity. The Bullion Market is ruled by Supply and Demand, especially as regards Silver ; and the business between the parties dealing in Bankers’ Bullion is negotiated through certain highly respectable firms of Bullion Brokers. The usual commission charged by them is $\frac{1}{8}$ th per cent.; but on certain special descriptions of Bullion less than that is charged. The question whether the commission is to be paid by the buyer or the seller, or by both, depends upon circumstances.

We subjoin here a copy of a Bullion Market Report, issued by one of these firms ; also a statement of the Import and Export of Bullion into and from London, during six months, ending 31st December 1867.

REPORT ON THE BULLION MARKET.

For week ending 23rd January 1868.

GOLD.—The demand for export continues unabated, and all the arrivals of the past week, mentioned below, have been taken for the Continent. The supplies from America have somewhat fallen off, and will still further decrease, owing to the lower exchanges reported from New York; the amount stated, by the Overland Mail, as having been shipped during December, is also very small, only £102,000; but this may be in some measure accounted for by the fact that the only remaining duty, of 6d per ounce on the export of Gold, was to be removed on the 1st January this year, and the Banks would therefore hold back all this Gold until after that date.

The "Massilia"	has brought	£80,500	from Melbourne.
"Kent"	"	130,000	"
"Scotia"	"	270,000	from New York.
"Deutschland"	"	42,000	"
"Sidon"	"	82,000	"
Total		£554,500	

The exports have been £2,500 to the West Indies, and £36,000 to Alexandria; and the only transactions at the Bank have been a withdrawal of £57,000, and a sending in of £17,000, both these amounts being Sovereigns.

SILVER.—Our Silver Market has been quiet; we have no arrivals of Fine Bars to report—the price consequently remains as last quoted—60½d per ounce standard. The "Deutschland" brought about £40,000 from New York; this consisted of Doré Silver, which was placed at the last rate of 60½d. per oz. standard. The demand is almost entirely for the Continent.

MEXICAN DOLLARS.—The "Scotia" brought about £16,000 from New York, and these, together with those brought by the W. I. steamer, have been taken at 58½d per ounce; with the exception of a very small amount sent to China, the whole has been taken for refining purposes.

EXCHANGE on India for Banks' Drafts at 60 days' sight is lower, and may be quoted 1s 10½d per Rupee for all three Presidencies. Transactions are very limited.

INDIA GOVERNMENT LOAN NOTES show no alteration from our last quotations; the prices are, 108 to 108½ for the 5½ per Cents; 103 to 103½ for the 5 per Cents; and 87 to 87½ for the 4 per Cents.

QUOTATIONS FOR BULLION.

GOLD.

	<i>s</i>	<i>d</i>	
Bar Gold	77	9	per oz. Std.
Bar Gold, Fine	77	9	per oz. Std.
Bar Gold, Refinable	78	0	per oz. Std.
Spanish Doubloons	76	0 to 77/0	per oz. last price
South American Doubloons	73	9	per oz. last price
United States Gold Coin	76	3½	per oz. last price

SILVER.

Bar Silver	5	0½	per oz. Std. flat
Bar Silver, containing 5 grains Gold	5	0½	per oz. Std. last price
Fine Cake Silver	5	5½	per oz. last price
Mexican Dollars	4	10½	per oz.
Spanish Dollars (Carolus)	—	—	per oz. none here
Five Franc Pieces	—	—	per oz. none here

Quicksilver £6 17s per Bottle; Discount 3 per cent.

EXPORT of SILVER from SOUTHAMPTON to INDIA, CHINA and the STRAITS.

Year.	India.	China.	Straits.	Total.
	£	£	£	£
1859	11,163,384	3,374,250	290,887	14,828,521 (a)
1860	4,385,966	3,657,443	435,330	8,478,739 (b)
1861	5,682,645	1,052,240	89,922	6,824,807 (c)
1862	6,890,810	2,530,663	669,987	10,091,460 (d)
1863	5,971,632	1,995,909	295,470	8,263,011 (e)
1864	5,008,291	891,338	354,375	6,254,004 (f)
1865	2,738,762	560,026	299,270	3,598,058
1866	2,009,580	303,196	52,850	2,365,626
1867	370,231	265,766	6,915	642,912
1868 } to Date }	145	11,115	—	11,260

For Week ending 23rd Jan. 1868.

A. B. & Co., *Sworn Brokers.*

(a) Including Govt. Remittance about £8,173,124. (b) Including Govt. Remittance of £908,106. (c) Including Govt. Remittance of £1,070,908. (d) Including Govt. Remittance of £129,062. (e) Including Govt. Remittance of £106,833. (f) Including Government Remittance of £55,980.

ANNUAL REPORT ON

For the Year ending

BY MESSRS. A. B. & CO.

STATEMENT OF IMPORT OF BULLION INTO LONDON FROM UNDERMENTIONED PLACES, DURING SIX MONTHS ENDING 31st DECEMBER, 1867.				IMPORTS DURING CORRESPONDING PERIOD 1866.		
1867.	GOLD.	SILVER.	TOTAL.	GOLD.	SILVER.	TOTAL.
	£	£	£	£	£	£
BELGIUM	7,080	415	7,495	96,900	—	96,900
FRANCE	48,190	283,960	332,150	1,813,570	705,502	2,519,072
HANSE TOWNS	19,250	—	19,250	290,100	3,900	294,000
HOLLAND	—	—	—	74,630	—	74,630
COPENHAGEN	—	—	—	—	8,100	8,100
RUSSIA	25,000	—	25,000	69,580	11,814	81,394
SPAIN AND PORTUGAL	277,040	14,100	291,140	257,118	24,034	281,152
GIBRALTAR	15,750	23,975	39,725	7,200	17,000	24,200
MALTA	14,230	1,000	15,230	—	1,600	1,600
CONSTANTINOPLE	—	—	—	—	—	—
ALEXANDRIA	65,799	—	65,799	183,100	—	183,100
ADEN	—	—	—	—	—	—
CEYLON	47,000	—	47,000	329,600	—	329,600
BOMBAY	—	—	—	458,700	—	458,700
MADRAS	—	—	—	20,000	—	20,000
CALCUTTA	—	—	—	336,480	730,000	1,066,480
SINGAPORE	—	—	—	—	—	—
PENANG	—	—	—	—	—	—
MANILLA	—	—	—	—	—	—
HONG KONG	—	—	—	—	—	—
SHANGHAI	—	—	—	—	—	—
FOO-CHOW-FOO	—	—	—	—	—	—
CAPE OF GOOD HOPE	92,780	122	92,902	88,686	6,831	95,517
CAPE VERD AND SIERRA LEONE						
UNITED STATES	2,712,855	863,945	3,566,800	1,004,835	1,193,935	2,198,770
MEXICO, CENTRAL AME- RICA, WEST INDIES, &c. }	1,513,280	3,523,211	5,036,491	1,183,902	3,391,050	4,574,952
BRAZILS	1,005,800	56,165	1,061,965	256,902	25,254	282,156
BRITISH NORTH AMERICA	70,142	2,200	72,342	51,800	—	51,800
AUSTRALIA	3,428,620	—	3,428,620	4,029,720	—	4,029,720
† NEW ZEALAND	126,500	—	126,500	68,000	—	68,000
TOTAL	£ 9,469,316	4,759,093	14,228,409	10,621,183	6,119,020	16,740,203
Amount Imported during the Six Months ending 30th June 1867 }	6,420,840	4,353,947	10,774,787	13,414,667	3,870,784	17,285,451
TOTAL IMPORTS, 1867, £	15,890,156	9,113,040	25,003,196	24,035,850	9,989,804	34,025,654
TOTAL IMPORTS, 1866, £	24,035,850	9,989,804	34,025,654	§ Jan. to June 1866		

† The produce of the New Zealand Gold Fields is very much larger than the amount stated above, but the greater part is at present sent to Australia for Shipment elsewhere. The sum stated by us is the total received in England direct from New Zealand.

THE BULLION MARKET.

31st December 1867.

London, 1st January 1868.

STATEMENT OF EXPORT OF BULLION FROM LONDON TO UNREMENTIONED PLACES, DURING SIX MONTHS ENDING 31st DECEMBER, 1867.				EXPORTS DURING CORRES- PONDING PERIOD 1868.		
1867.	GOLD.	SILVER.	TOTAL.	GOLD.	SILVER.	TOTAL.
	£	£	£	£	£	£
BELGIUM	6,600	804,505	811,105	88,380	955,843	1,044,203
FRANCE	3,982,990	1,658,820	5,621,810	3,259,220	1,468,552	4,727,772
HANSE TOWNS	46,160	491,651	537,811	231,580	1,304,143	1,535,703
HOLLAND	13,352	127,810	141,162	44,400	1,169,094	1,213,494
COPENHAGEN	—	—	—	—	10,000	10,000
RUSSIA	—	10,000	10,000	—	—	—
SPAIN AND PORTUGAL	—	—	—	81,300	2,380	83,680
GIBRALTAR	—	—	—	7,500	—	7,500
MALTA	40,000	—	40,000	740	—	740
CONSTANTINOPLE	—	—	—	—	—	—
*ALEXANDRIA	103,970	—	103,970	119,768	2,450	122,218
*ADEN	50,000	—	50,000	6,500	—	6,500
*MAURITIUS	—	—	—	—	—	—
*CEYLON	—	—	—	—	—	—
*BOMBAY	45,000	13,759	58,759	600	3,330	3,930
*MADRAS	4,927	—	4,927	1,889	542	2,431
*CALCUTTA	22,000	—	22,000	—	25,150	25,150
*SINGAPORE	—	—	—	—	5,940	5,940
*PENANG	—	—	—	—	—	—
*MANILLA	—	—	—	—	—	—
*HONG-KONG	—	150,802	150,802	—	57,772	57,772
*SHANGHAI	—	41,145	41,145	—	8,625	8,625
*FOO-CHOW-FOO	—	—	—	—	—	—
CAPE OF GOOD HOPE	—	—	—	—	—	—
CAPE VERD AND SIERRA LEONE	116,500	8,270	124,770	79,900	7,514	87,414
UNITED STATES	15,500	—	15,500	1,252,300	—	1,252,300
MEXICO, CENTRAL AME- RICA, WEST INDIES, &c. }	10,600	1,400	12,000	—	31,200	31,200
BRAZILS	353,520	48,110	401,630	943,070	41,100	984,170
BRITISH NORTH AMERICA .	51,400	—	51,400	95,600	—	95,600
AUSTRALIA	—	—	—	—	6,000	6,000
NEW ZEALAND	—	—	—	—	—	—
TOTAL	£ 4,842,519	3,356,272	8,198,791	6,212,707	*5,099,635	11,312,342
Amount Exported during the Six Months ending 30th June 1867 }	3,009,890	3,055,794	6,155,674	7,761,042	*3,299,273	11,060,315
TOTAL EXPORTS, 1867 £	7,842,399	6,412,066	14,354,465	13,973,749	8,398,908	22,372,657
TOTAL EXPORTS, 1868 £	13,973,749	8,398,908	22,372,657	—	*Jan. to June 1868	—

* The following amounts have been exported from Marseilles }
to Alexandria, India, China, Reunion, Mauritius, &c., } GOLD. SILVER. TOTAL.
between July 1st to December 19th 1867 } £229,109 £469,820 £697,929

A. B. & Co., Bullion Brokers.

The Custom-House Statistics are not reliable. We quote here passages from the Annual Circular of another brokering firm, alluding to this subject, 2nd January 1868.

"Taking the Imports and Exports from the Custom House records for the past twelve months, and comparing them with former years, we find the following results :— Total Imports, 23 millions; total Exports, 14 millions; balance in favour of this country, 9 millions, of which 2½ is in the Bank of England, and 6½ millions unaccounted for. From America, large as our Imports have been, viz., 6½ millions, the total is less by £3,700,000 than last year. Australia has also sent less by nearly a million. On the other hand, our Exports show a deficiency chiefly to India and China, the Exports to Egypt showing this year, as compared with former ones, £90,000, against £2,995,000 in 1866, £1,300,000 in 1865, £3,300,000 in 1864, and £12,300,000 in 1863. With respect to the Continent, there is a great falling off apparently, but, as we said before, we have no confidence in the accuracy of the returns furnished to the Custom House."

After a general discussion on mercantile disasters, over-trading, borrowed capital, unfair competition, plethora of money, and want of commercial morality, the writer proceeds as follows :—

"Capital and labour, which ought to have been harmonious, are utterly antagonistic; class is against class; whilst corruption, immorality, and downright theft, are openly laid, by our leading newspapers, to the charge of the whole community. If this be true, it may, in some measure, account for what may have appeared to others an anomaly in the Bullion trade, viz., the large quantities of Gold annually unaccounted for,—for example, from the 1st January 1859, to the 30th November 1867, the records of the Board of Trade inform us that our Imports of Gold exceed our Exports by £37,505,313. Of these 37½ millions, probably two are in the Bank of England in excess of what it held at that date, and the other 35½ are unaccounted for. We do not find the same discrepancy in the returns of Silver, the exports for the same period being about three millions in excess, which fact is not without its significance."

What the writer hints at here is the well-known practice of some shippers of Bullion to omit declaring the value of the Gold shipped by them; the Gold is frequently packed with and declared as Silver, in order to save freight, a practice, which though no doubt well paying to those who undertake the risk, is not in accordance with the sound principles of com-

mercial honesty and prudence. The deficit of the 35½ millions of Gold is thus accounted for by the excess of the three millions of Silver.

Bankers and Mercantile Houses having to receive or to ship Bullion generally entrust the management of these matters to the Bullion Brokers, who will also make advances of money if required.

Without proper appliances and suitable arrangements for the purpose, a Merchant cannot well himself receive or ship Bullion; the packages are heavy, and shake the floors of the offices; they are apt also to damage the fingers and toes of persons not accustomed to handle them. Spacious strong rooms are required for the safe keeping of Bullion. Assay pieces must be cut off by a practised hand; proper scales and weights have to be kept. Moreover, the many technicalities involved in the melting, the Assay returns, the calculations and other matters, require a special training which is not likely to be found or got in an ordinary counting-house.

Now a Bullion broker has all the necessary appointments and appliances for his business; so he can readily undertake, for a moderate charge, in addition to the receiving of Bullion and the management of the accounts, the proper packing of the parcels, and their delivery at the Railway or Shipping stations designated.*

* Bullion should always be packed in stout iron-clamped boxes, well secured against attempts to open them on the way. Robberies

The Banker or Merchant has simply to receive or to pay the money, and to verify the accounts made out by the Broker. There are many Houses in London who in the course of their career, have dealt in many millions' worth of Bullion through the agency of brokers, without ever having seen any of their property.

The confidence reposed by them in the parties entrusted with the management of this business for them is, therefore, surely not of a light character.

We subjoin here a list of the current rates of freight and insurance on Bullion to or from the principal Ports. Large shippers may be in a position to make arrangements for cheaper rates; some of the more important Houses have established an Insurance Fund of their own, the rates at Lloyds being too high in comparison to the risk.

have occasionally occurred through indifferent packing. Bullion boxes should not carry more than 3,000 ounces, which is already a pretty heavy weight in a small compass.

The Silver Bars shipped to the East Indies are generally packed one in a box; and the Peninsular and Oriental Steam Ship Company instruct Shippers as follows:—

“Boxes should be strongly made, with elm ends, lined with tin, and they must be sealed over tape in countersunk holes. Hoe's Safety Bullion Box is recommended, which may be procured at No. 44, Leadenhall Street.”

The delivery of Bullion at the Railway Station always takes place under the care and supervision of one or several Clerks specially entrusted with the business. Where Bullion is brought alongside a ship in the river, in lighters receiving it from a wharf, great responsibility attaches to the parties in charge of the treasure. There are special Carmen and Lightermen employed for the conveyance of Bullion.

RATES OF FREIGHT and INSURANCE for BULLION from or to LONDON.

		Freight.	Insurance.
PARIS	By S. E. Railway or Messageries Impériales		
	For sums between £800 and		
	£1000—for every £100	4s 7d	
	For sums above £1000	4s	1 ¹ / ₅ o/o
BOULOGNE	By General Steam Navigation Company		
CALAIS			
ANTWERP			
ROTTERDAM			
HAMBURG		For sums up to £5000	1 ¹ / ₂ o/o
		" above "	1 ¹ / ₂ "
ST. PETERSBURG	By Steamer	1 ¹ / ₂ "	1 ¹ / ₂ "
MADRAS	By Peninsular and Oriental Steamships		
BOMBAY			
CALCUTTA		2 o/o	1 ¹ / ₂ "
HONG KONG	Do.	2 ¹ / ₂ "	1 ¹ / ₂ "
SHANGHAI	Do.	2 ¹ / ₂ "	1 "
AUSTRALIA	Do.	2	1
	By Sailing Vessel	2d a 2 ¹ / ₂ d per oz.	
NEW YORK	Per Cunard Steamers, up to 10,000	1 ¹ / ₂ "	
	" " 30,000	1 ¹ / ₂ "	1 ¹ / ₂ o/o in summer
	" " 50,000	1 ¹ / ₂ "	
	Above 50,000	1 ¹ / ₂ "	1 ¹ / ₂ " in winter
	Other Steamers may charge lower rates.		
CALIFORNIA*	By Pacific Mail Steamers to Panama	1 ¹ / ₂ o/o	1 ¹ / ₂ "
	" Royal Mail Steamers from Panama to England	1 ¹ / ₂ o/o	
PANAMA	By Royal Mail Steamers		
	For Gold	1 ¹ / ₂ "	
	" Silver	1 ¹ / ₂ "	1 ¹ / ₂ "
VALPARAISO	By Pacific Steamers and Royal Mail		
	For Gold	2 ¹ / ₂ "	1 "
	" Silver	2 ¹ / ₂ "	
RIO JANEIRO	Per Steamers to Southampton	1 "	
	Delivered in London	1 ¹ / ₂ "	1 ¹ / ₂ "
CAPE or GOOD HOPE	Per Union Steamship Company from Southampton	1 ¹ / ₂ a 2 o/o	1 ¹ / ₂ a 1 ¹ / ₂ o/o
MAURITIUS	Do.	2 a 2 ¹ / ₂ "	1 ¹ / ₂ a 1 ¹ / ₂ o/o

The rates of freight are exclusive of the usual Primages; the rates of Insurance include discount and commission.

* The competition between rival Steamer Lines sometimes reduces the rates of freight on the Pacific side to 1¹/₂ o/o.

We also subjoin Form of a Bill of Lading for Doré Silver shipped from California by Pacific Mail Steamer (American) to Panama, and thence by Royal Mail Steamer (American) to Southampton.

[No. 16.]

Pacific Mail Steam Ship Company.

FOR TREASURE FROM PORTS NORTH OF PANAMA.

DELIVERABLE IN LONDON.

Said to contain	Alleged value of contents.
Forty-four Silver Bars	Dolla. 65962 80

Freight to Panama $\frac{1}{2}$ per cent. Dols. 577 17 cents.
28—11—64.

Received Payment for P. M. S. Co.
TAYLOR.

Royal Mail Steam Ship Company.

Shipped in good order and condition, by Messrs. N. N. & Co., on board of the Pacific Mail Steam Ship Company's Steamer GOLDEN AGE, whereof W. PARKINSON is Commander for the present voyage, and now lying off the Port of SAN FRANCISCO,

Packages, weighing, and being marked, numbered and sealed, and said to contain severally SILVER BARS, as specified in the respective columns in the margin, that is to say, and 80/100 Dollars, conveyed, via Panama and Aspinwall, or Chagres, to the Bank of England, that is to say, to be carried to Panama (the freight to that port having been paid) by the Packets of the said Pacific Mail Steam Ship Company, with leave to tranship from one to another of such Packets, and by arrangement between the Pacific Mail Steam Ship Company and the Royal Mail Steam Packet Company to be conveyed by the latter Company from Panama, across the Isthmus to Aspinwall, or Chagres, and thence by the Packets of the said Royal Mail Steam Packet Company, with leave to tranship from one to another of such Packets, and to deliver in such good order and condition as aforesaid.

(The act of God, Enemies, Pirates, Robbers and Thieves by land or at sea, Restraint of Princes, Rulers, and People, Vermin, Barratry, Fire on Board, or on Hulk or Craft, or on Shore, all accidents, loss and damage from Machinery, Boilers and Steam, or from Perils of the seas or of land or rivers, of whatever nature or kind soever, or from any act, neglect or default whatsoever of the Pilot, Master, or Mariners, in Navigation, of the above-mentioned Companies being excepted, and the Companies being in no way liable for any consequences of the causes above excepted.)

at the Bank of England, unto Messrs. N. N. & Co., or his or their Assigns, he or they paying freight from Panama at the rate of $\frac{1}{2}$ ths of one per cent. with Five per cent. Primage on the Bank of England value.

All responsibility on the part of the Pacific Mail Steam Ship Company is to cease on delivery of the above-mentioned Packages to the Agent of the Royal Mail Steam Packet Company at Panama, and from that time the latter Company is alone to be responsible.

In Witness whereof I have signed six Bills of Lading, all of the same tenor and date, one of which being accomplished, the other five to stand void. Not responsible for seizure by Privateers or Letters of Marque, Passenger Risings on Board, Fire on Wharf, in Warehouse, or Cars.

Dated this 8th day of September 1867.

Signed W. PARKINSON.

CHAPTER XXI.

COINING.

THE earliest records of history inform us that the Precious Metals were used as standards of value, being given in exchange or *payment* for other commodities. With regard to Gold, its employment in the capacity of *money* originated first, in all probability, in its use in the form of portable ornaments. The smaller or larger nuggets found often present curious and fantastic shapes, suggestive of their suitableness for personal adornment. After a while the aid of Art was called in to fashion the native article into more graceful forms; and from the remotest known ages jewelry, the joint production of Nature and Art, has constituted, as it continues to constitute to the present day, an important element in the social economy of man. The primitive rude Gold ornaments of early ages were no doubt soon made to serve, in some way, as mediums of exchange. The discoverers of America met with Gold ornaments subserving the purpose of money in the hands of the natives. Some of the Indian tribes in Central and South America still pay in Gold and Silver ornaments; and curiously-twisted solid ear-rings, arm-lets, and other trinkets pass into the possession of

traders, and find their way finally to the melting establishments in London.

The ancient Jews dealt in Gold and Silver by weight, and there are numerous records speaking of "shekels" of Silver and "talents" of Gold and Silver. Even to our own day the Precious Metals are, in certain parts of the world, more especially in the far East, still used as money by weight. In China, for instance, *Sycee Silver* circulates as money, in lumps of several pounds weight, cast roughly into bowl-shaped moulds, and marked with a few Chinese characters, stating weight, fineness, and value. The Chinese are so much accustomed to these pieces that they actually remelt the Mexican Dollars imported from abroad into *Sycee*.

The first introduction of *Coins*, or pieces of the Precious Metals impressed with a *stamp* declaring the character and value of each piece, marked, most likely, an important era in civilisation. We have no positive evidence, however, as to the period when Coins were first introduced, or the nation which first made use of them. Herodotus gives the credit of the introduction of Coined Money to the Lydians; other ancient authors place the invention of the Art of Coining in the reign of Saturn and Janus, in Italy, before the beginning of authentic history. Many learned and interesting books have been written on the Coins of the Egyptians, Hebrews, Romans, Greeks, and other nations. The study of ancient Coins and of the history connected with them is a most interesting pursuit. The patient researches of a number of devoted students

have raised Numismatics to the rank and dignity of a science.

It is a remarkable feature in ancient Coins that most of them have impressed on the obverse the effigies of the Emperor, King, or Ruler of the State; whilst the reverse often shows the denomination or value of the piece; a custom which still prevails to the present day. This fact, in connection with some others of a similar nature, tends to prove that the ruling powers, in all more or less civilised countries, have at all times, from a very early period, been fully alive to the advantages of a properly regulated system of Coinage, and that they have accordingly always striven to keep the manufacture and issue of Coined Money in their own hands, or at least under their strictest control.

The Art of manufacturing Coin improved in successive ages, with the advance of civilisation. It must be acknowledged, however, that some of the ancient Greek and Roman Coins, for beauty of design, fullness and sharpness of reliefs, and in other respects, are quite equal, if not even superior, to the Coins of later periods. In the Middle Ages some splendid specimens of Medals were produced, and some finely executed Coins, which deserve to rank high as objects of Art. The general Coinage, however, remained, up to a comparatively recent period, more or less crude in design and imperfect in execution. The invention of steam has caused quite a revolution in Mint operations, having imparted to our Coining Machinery a power and regularity of action previously altogether unattainable. No great wonder, then, that the Coins struck at the

present time should differ so vastly, and so greatly for the better, from those of former ages. Compare an English Guinea or a Shilling of the last century with a Sovereign or Shilling of the Coinage of the last thirty or forty years, and the difference in the regularity of shape and in the sharpness and neatness of impression will be at once apparent.

Before the use of machinery was introduced into it, the process of Coining was a very simple, but also necessarily a very laborious one. The Touchstone, or some other imperfect mode of Assaying, had to be resorted to, to get an idea of the fineness of the metal. A certain quantity of Alloy or fine Metal, as the case might be, had to be added in order to attain, as near as practicable, to something like uniform quality in the Coinage. The Bars or pieces had to be melted next and cast into flat blocks, which had then to be further flattened into slabs or plates of the required thickness. Disks of certain sizes had then to be cut, to suit the Coin intended to be struck. These disks were also made in another way: circular bars or rods, of the diameter of the intended Coin, were cast, and disks of the required thickness successively chopped or sawn off the ends. These pieces had then to be adjusted to the exact weights required, by filing the excess off the heavier ones, and throwing aside the lighter pieces for remelting. The adjusted pieces were then at last ready for the final process of stamping. The dies were made of hardened iron or steel, and the impression intended to be stamped on the Coin was graved into their inside. They consisted of two loose moveable halves fitted

together. One of these was laid on a suitable strong support, and the Coin disk placed on top of it; the other half was then reversed on the disk, and sharp blows were dealt on it with a hammer, until the softer metal of the disk was thus driven in to fill the graved parts of both dies, and thus to receive the intended impression. The edge of the Coin was then ribbed or milled in some equally clumsy way, and the piece of money was ready at last for circulation. We are told that some of the Austrian ducats and Spanish doubloons were made in this primitive fashion as late as last century. In the East, in Japan, Coins are still struck by a similar process, as the following account, taken from a London newspaper a few weeks ago, will show. (Japanese Silver money is made in oblong square-shaped pieces, called *Itziboos*,—an *Itziboo* is worth about 1s 4d of our money).

“THE SILVER MINT OF JAPAN.—If we could gain admission to the Silver Mint at Yeddo, we should see the following process continually going on. A lump of Silver of the necessary fineness, obtained either from the Government Mines or by melting down Mexican dollars, is placed in an iron ladle and reduced to a molten state by means of a charcoal fire and a pair of blacksmith's bellows. It is then poured into a mould, from which it is taken out in the shape of thin rectangular bars, which are immediately thrown into a tub of cold water. On being taken out, a man, seated on the ground, shears off with a pair of large fixed scissors all jagged pieces adhering to the angles. They are now handed to another man, who weighs them one by one, and a piece is cut off, if necessary, to reduce the bar to its proper weight. The next process is that of dividing the bar by a fixed pair of shears into eight equal portions of the size of *itziboos*; this is done by a workman cutting it as accurately as his practised eye will enable him, and his work is tested

by weighing, light pieces being rejected, and the heavy ones reduced to their proper weight by the scissors. The pieces are now heated white-hot in a charcoal fire, plunged into water, boiled, and washed in a kind of brine, from which they come out with a moderately bright surface. They are next very slightly milled on the two sides, and more deeply on the edges, by means of a milled hammer. They are now ready for stamping. A man places one of the pieces on a stationary die, and lays on the top the other die; a second man, armed with a huge hammer, gives one blow on the upper die, and the coin is struck. The blows are dealt in rapid succession, and the whole scene reminds one of a blacksmith's shop. Boys now punch small stars on the edges by means of chisels and hammers. The coins are weighed one by one for the last time, and the light ones rejected. The Imperial stamp is added by means of another stamped chisel and mallet, and the coins are complete. They are rolled up in paper packets of 100; each packet is weighed, and marked with a seal, which serves as a guarantee of its contents, and gives it currency as 100 itziboos. While every operation is performed in this primitive manner, perfect order prevails in the establishment; every man goes through his portion of the work in silence, and with the regularity of clock-work, and many evince considerable skill. There are about 300 hands employed in the building. When the men enter in the morning they are made to divest themselves of their own clothes, and put on others belonging to the Mint. At the end of the day's work a gong sounds, when the somewhat curious spectacle is presented of 300 men springing from the ground, on which they had been seated, throwing off their clothes, and rushing, a naked throng, to one end of a yard. Here they pass through the following ordeal in order to prove that they have no silver on them:—Their back hair is pulled down and examined, they wash their hands and hold them up to view, they drink water, and then holloa, and, lastly, they run to the other end of the yard clearing two or three hurdles on their way; after which performance they are allowed to put on their own clothes and depart. Mr. Sidney Locock, Her Majesty's Secretary of Legation, from whose report of this year these statements are taken, believes that the Mint has been only twice entered by foreigners, and states that the apparent absence of all restrictions,

with regard to touching and handling the coins points to the probability that it is not often open to the public ; but he remarks that even if it were the manners and customs of the country are not such as would preclude a mixed assemblage of visitors from going over it and remaining to the end. The quantity of silver being coined daily at the beginning of this year was 50,000 momme, which at the rate of 2·3 momme to the itziboo would give a daily total issue of over 21,000 boos, or about £1,500. The whole of these are produced by the simplest manual labour, unaided by a single piece of machinery."

At the beginning of the 17th century the French made a great improvement in their Mint by the introduction of the Rolling Mill and the Screw Press. The former served to flatten the Metal Blocks between iron or steel rollers ; whilst the Screw Press gave much greater regularity and power to the process of stamping the Coin. The Screw Press is made very much upon the plan of an ordinary letter-copying press without the flat plate, only it is very much larger. The screw has a greater diameter, and the arms or knobs some three or more feet long, and even longer, carry at both ends heavy balls or weights. These heavily weighted arms are swung round by hand ; and, after a few fast revolutions, the lower end of the screw necessarily acquires an enormous force. One of the dies, with the metal disk laid on it, being placed right underneath the screw ; the other fastened under the end of the screw, so that the two meeting will exactly fit together ; the screw with the powerful impetus acquired by it comes suddenly down upon the disk, and drives it with irresistible force into the dies. The Coin is thus stamped with one single blow. Although the Screw Press is simply worked by hand, it natur-

ally performs its functions with greater regularity and expedition than could possibly be achieved with the hammer. Screw Presses are still in use in some of the South American Mints. Some of these are of considerable size; a very large specimen was shown at the Exhibition of 1862; and there is now one at work, we believe, in the Crystal Palace at Sydenham. For striking large medals, where speed is of less importance than careful manipulation and deep and clear impression, the Screw Press answers the purpose exceedingly well.

Before the invention of Steam, the machinery of the Mints was driven by Water or by Horse-Power. The French Mint had a large Horse-Mill, in which shafts were turned by horses harnessed to them.

Since that greatest revolutionist of the age, Steam, has come to the aid of our Mints, the production of Coin is no longer the slow and laborious process it was in former times.

A Modern Mint is an establishment worth seeing. To give a full and lucid description of the Coining processes as now conducted, would require the aid of illustrations and elaborate technical explanations. We will, however, endeavour to give a cursory account of the ways and means by which the **BRITISH MINT** turns out as current Coin of the realm the Gold and Silver Bars sent into it.

It has been stated already, in Chapter XIII, that any one sending a certain quantity of Gold into the Mint has a right to have it returned to him in British

Gold Currency, free of charge for Mintage. We have explained also in the same place how it comes that, notwithstanding this general facility afforded, the Bank of England is practically the only importer of Gold Bullion into the Mint. Whenever the Bank of England finds that large exports of Gold Coin, or an undue accumulation of light pieces from abrasion, make a fresh issue of Sovereigns, &c. desirable, the authorities of that Institution give notice to the Master of the Mint that Gold Bars will be sent in. The Mint Officials make their preparations accordingly; and at the time appointed several hundred Gold Bars, of about 200 ounces each, are received from the Bank, to be converted into Coin.

These Bars have been duly Assayed at the time of their purchase by the Bank; the Assay Report is sent in with them. The Mint authorities control the Bank Assay by a fresh Assay of their own, which generally gives corresponding results, or pretty nearly so. On these Assays the exact value of the Bar is fixed.

These preliminaries settled, the Bars are taken into the Operative Department of the Mint, where they pass through the following processes:—

STANDARDING.—The Gold furnished to the Mint is of different degrees of fineness. The Bank, no doubt, may select, from its large stock, Bars as nearly as possible of equal quality. Whether this is done or not we cannot say; however, as the extensive Refineries in London supply the Bullion Market with an abundance of fine Gold, the greater number of the Bars

sent by the Bank to the Mint consist of the finer titles of Gold. Formerly the Mint did their own Refining ; but that branch of the Establishment was sold in 1851 to Sir Anthony Rothschild, and is now one of the large private Refineries alluded to in Chapter XVI. All the fine Gold required by the Mint can be got readily from the Bank.

The British Standard for Gold being 22 carats in the 24, it follows that Bars reported Worse than Standard have to be brought to Standard by the addition of pure Gold ; and Bars reported Better than Standard have to be reduced to Standard by the addition of Alloy. The Alloy used for this purpose is Copper. Pure Gold and pure Copper, in about the British and French Mint proportions, give the best metal for Coin, and the best colour. Many of the finer Bars, however, contain Silver in proportions of much less than 83 parts in a thousand, so that it will not pay to Refine them. If such Bars are reduced to Standard by the addition of Copper, the Alloy in them consists partly of Silver and partly of Copper, which imparts a lighter colour to the Coin. The Sovereigns struck in Australia, where Refining is an expensive process frequently contain Silver for their sole Alloy, which gives them a pale straw-coloured appearance. A practised eye will at once detect these differences in the colour of Gold Coin.

The greater bulk of the Gold Bars sent to the British Mint for Coinage is finer than Standard, and has accordingly to be reduced by the addition of Copper.

As the Assay of every Bar is known, it is easy to determine the quantity of Gold or Copper required to make it Standard.

If a Bar weighing 165 ounces is 1000 fine, 15 ounces of Copper must be added to it, making the total weight 180 ounces Standard.

For 22 carats Gold	.	.	165 Gold.
„ 2 „			Copper . 15 Copper.
			Standard 180 ounces.

If the Bar weighs 170 ounces, and is 962 fine (B 1 carat $0\frac{1}{4}$ grain), there are present in it 163·540 ounces pure Gold, which requires for Standarding the addition of one-eleventh of its own weight of Alloy, say 14·867 ounces; but as the Bar weighs 170 ounces, there are already contained in it 6·460 of Alloy, consequently 8·407 Copper have to be added, making the total weight 178·407 Standard.

If a Bar weighing 200 ounces is reported Worse, say W $0\cdot1\frac{5}{8}$ grain, or 900 fine, the fine weight being accordingly 180 ounces, the Standarding of the Bar will require the addition of 40 ounces of fine Gold, raising the total weight to 240 ounces Standard Gold. A Silver Bar of 1,000 ounces weight of pure Silver (1,000* fine) will require the addition of 81·081 ounces of Copper to reduce it to the Standard; which will raise the total weight accordingly to 1081·081 ounces.

The Standarding of a Silver Bar of 500 ounces

* Practically there is no such thing as 1,000 fine Silver, as there always remains a trace of Alloy in the Precious Metal.

weight, reported W 22, will take 611·11 ounces of pure Silver, raising the total weight to 1111·11 ounces Standard.

The **MELTING** of the Gold or Silver with the Copper requires care, the latter Metal being apt to suffer oxidation at a high temperature, which, if not duly guarded against, will cause the mixed Metal to turn out above Standard. In ordinary Melting the loss of the baser Metal from Oxidation or Evaporation is a matter of no consequence; but the case is different with Mintage Meltings. The process is therefore conducted here in a somewhat different manner from what we have previously described; the heating proceeds more gradually. The melting pot is heated to redness, and a lump of Charcoal is placed at the bottom; the Gold is then introduced first, and the Copper added after through a metal funnel. When the mass is in fusion, the lump of Charcoal rises to the top, where it absorbs the Oxygen which might otherwise combine with part of the Copper. The molten mass is properly stirred from time to time, to insure the most complete intermixture of the Metals, till it has reached a certain temperature which the Melter knows by experience to be the most suitable for casting soft bars; the pot is lifted out of the furnace by a crane. Each pot holds about 1,300 ounces of Metal.

A number of upright moulds, warmed previously in a stove, and anointed inside with a cloth dipped in oil, are fixed in a suitable iron framework placed on wheels. These moulds receive the molten metal,

which, after cooling, is turned out in Bars or Ingots, about 24 inches long by $1\frac{3}{8}$ inch broad, and one inch thick for Sovereigns. (For half-sovereigns the Ingots are only $1\frac{1}{8}$ inch broad, and for the Silver Coinage they differ in breadth according to the pieces intended to be struck.) Each Sovereign Bar weighs about 320 ounces.

Assays are taken of each series of Bars, to prove the Standard. If the Assay pieces turn out above or below Standard, the Bars have to be re-melted. But if the Assays turn out correct, the Ingots pass on to the next stage, in the

ROLLING ROOM, where they are flattened out between sets of highly polished Cast Iron Rollers. The Rolling Mill is so constructed that the Upper Roller can be raised and depressed at will. The Bars, which, as just stated, are one inch thick, by $1\frac{3}{8}$ inch wide, have to be reduced to about $\frac{1}{20}$ inch thick, and widened to about $1\frac{7}{8}$ inch broad. The first set of Rollers in the Mill is set pretty wide apart, reducing the thickness of the Ingot from one inch to about $\frac{3}{4}$ inch. The space between the Rollers is then successively and gradually narrowed, until after passing six or seven times through them, the Bars are flattened out into ribbons of about $\frac{1}{8}$ inch thick by $1\frac{3}{4}$ inch broad. This gradual Rolling is necessary in order to secure the greatest practicable uniformity in the thickness of the Bar throughout, and to guard against its gaining overmuch in breadth, as the principal object is to *lengthen* it out. Originally two feet long, the Bars are now ribbons seven or eight feet long. They are then

cut up into pieces 18 inches long. The repeated Rolling having made the Metal by this time hard and brittle, these pieces have to be softened again by "*Annealing*" before they can be further reduced in thickness.

THE ANNEALING ROOM is fitted up with furnaces. The pieces or clips of Metal are placed in copper tubes hermetically closed; and after being heated to the proper temperature, the copper tubes with their contents are rapidly cooled in water. Slow cooling would render the metal too soft for working; whilst the quick cooling imparts to both Gold and Silver the desirable degree of malleability. The Annealed pieces are now called "*fillets*." They are returned to the Rolling Mill, where they are passed again several times through the Rollers, to reduce them in thickness. Several so-called "*Spring Pinches*" are given them, which simply means that they are passed repeatedly through the Rollers remaining set at the same distance. This is done with a view to insure uniform thickness. The flattened fillets are now successively passed through four other sets of Rollers, with gradually decreasing space between them; after which they are passed through the "*Gauge Mill*," when they are found to have a thickness of 0.050 in. by 1.829 in. broad. It is extremely difficult to get the fillets of uniform thickness throughout, and frequent gauging is necessary to ascertain the result of the rolling. Uniform thickness is of the greatest importance; since, when the round disks come to be cut out of the fillets afterwards, varying thickness, although scarcely perceptible

at first, will cause very appreciable differences in the weight.

The fillets are after this taken to the **DRAG ROOM**, where they are passed through the Steel Rollers of the so-called "*Flatting Mill*," and are then finally pulled through what is called the "*Draw Bench*." This machine is fitted with a pair of fixed non-revolving steel cylinders, between which the fillets are dragged, to receive their final adjustment.

The fillets are then *tried*, that is to say, a disk is cut or punched out of each, and weighed; if the weight is found correct, the fillet is passed; if not, it is either subjected again to the Rolling process, or sent back to the melting room for re-melting. The fillets that have been duly passed are now taken to the

CUTTING-OUT ROOM, where the disks are punched out. This is done by the "*Cutting-out Presses*," of which there are about a dozen in the room, for the different sizes of coin. These presses are constructed on the screw principle, the screw is worked by cams or wipers, turned by a steam engine, and the fillets are guided underneath the punch by hand. The disks thus cut out are called "*Blanks*" or "*Planchets*." The perforated ribbons or fillets, called *Scissel*, go back to the Melting Room, to be re-cast into Bars.

The *Blanks* are to all practical intents and purposes Coin of the value intended, except in this, that they are not yet impressed with the stamp on the obverse and reverse. Before they are sent

to the Coining Presses, however, they are carefully examined and accurately weighed in the

WEIGHING ROOM.—The weighing is done by the wonderful scales, called "*Cotton's Automaton Weighing Machines.*" As we cannot give here an elaborate description of these highly ingenious instruments (of which a large number are in use, costing about £250 each), we will simply state that each one of these self-acting scales weighs Sovereigns at the rate of 60 per minute. The Blanks are supplied by hand; they are piled on their edges in the lane of a slanting gutter tube, projecting over the Machine; as they descend they drop one by one into the scale, which not only instantly determines their weight, but actually assorts them, separating the full weight Blanks from the light and over-weight, by sending them severally, with unerring certainty, through three different slits underneath, into separate compartments. The light pieces are re-melted, the over-weight blanks are generally reduced to the proper weight by filing by hand, or by a filing machine, an ingenious invention, for which the Mint is indebted to one of its own Officers. The full weight Blanks are then passed on to the

MARKING OR MILLING MACHINE.—The object of the Marking or Milling process, is to raise a slight rim round the edge of the disk; which serves to facilitate the subsequent *ribbing* of the edge. The Milling Machine is also self-acting; the Blanks are thrown by the handful into a copper pan, whence they drop upon the machine, which turns them in a vertical

position between rollers, pressing the edge, slightly rough from the cutting out, into a smooth and raised rim. The Machine can mill 600 Blanks in a minute.

By this time the Rolling, Cutting-out, and Milling have again imparted a certain degree of hardness to the metal, which therefore now requires another Annealing before it goes to the Coining Press. A few thousands of the Blanks are placed in Iron receptacles, which are then heated to redness, and after this cooled again by immersion in cold water.

The Annealed Blanks are now boiled for a few minutes in a weak solution of Sulphuric Acid (*Pickle*). This serves to remove the slight film of Oxide of Copper, which has formed on the surface in the Annealing. The pickled Blanks are then washed in a stream of cold water, to clear away the acid; after which they are taken to the

DRYING ROOM.—Here they are put into a kind of Iron Roasting Cylinder, which contains sawdust. The Cylinder being pushed into the chamber of an oven, constructed for the purpose, is turned by means of a long handle. The sawdust, dried by the heat, serves as a kind of polishing powder, the required friction being supplied by the revolutions of the Cylinder. The brightly-polished Blanks are now ready for the Coining Press.

The **COINING ROOM** of the British Mint contains a number of "*Boulton's Screw Coining Presses*," which, as has already been stated, resemble, in their main features, large-sized Copying Presses without

Press plates. Boulton's Presses have long arms, with very heavy square weights at the ends; the shaft of the screw stretches through the floor into the apartment above, where the requisite motion is supplied by a suitable mechanism. This motion consists in lifting the screw by turning, then sending it back for the descending blow with considerable velocity and force. A comprehensive and lucid description of the construction and working of the apparatus cannot well be given without the aid of illustrations; but we may mention that the shaft is connected, in the apartment above, through a system of arms, beams, and rods, with cylinders, whose pistons are worked on the pneumatic principle, the requisite vacuum being created in a kind of boiler, through air-pumps driven by a steam engine in another part of the premises. Boulton's Presses are therefore known also by the name of "*Pneumatic Screw Presses*."*

The attendant on the Press, generally a boy, has with him a supply of Blanks, which he places pile upon pile into a vertical tube. By an ingenious feeding mechanism the Blanks are taken one by one from the bottom of this column in the tube, placed true on the die, and, after the stroke, thrown out into the proper case intended to receive them. All that the boy attending to the Press has to do, is to feed the tube with Blanks, and to watch the proper descent of the

* The so-called "*Lever Press*," now in general use in the French, American, and other Foreign Mints, is greatly superior to Boulton's Press.

screw; he can at any time stop the machine by touching a lever.

The *Dies* used for stamping coin are produced from *Punches* struck in a *Matrice*. The *Matrice*, or *Matrix*, is the original die. A cylinder of fine steel, about two inches in diameter and two and a-half inches high, is turned off into a truncated flat-headed cone, measuring at the top the exact diameter of the Coin to be struck. The design of the stamp is cut by hand into the top surface of the cylinder, the highest art and skill of the Engraver being brought to bear upon the proper execution of the design, which, though comparatively but a small object, it takes the labour of many months to complete. The lettering must be absolutely accurate; and the features of Her Majesty, when viewed under a microscope of great magnifying power, must present the appearance of a perfectly smooth mould for a Bass-relief considerably larger than life size.

The very name *Matrix* given to the original die suggests the necessity for extreme care and delicacy in the execution of the Stamp Design cut into it. When the design is finished, the *Matrice*, hardened by a peculiar process of cooling, serves to produce the *Punches*, which in their turn serve to produce the *Dies*.

The *Punches* are also Cylinders of fine steel, of the same shape as the *Matrice* Cylinder. The flat tops of these are pressed by a powerful Machine against the graved surface of the *Matrice*, and the still soft steel is, by a succession of steady blows, driven into the hollows of the design, which thus,

being concave on the *Matrice*, is reproduced convex on the *Punches*. When a number of *Punches* have thus been taken from the *Matrice*, they are properly hardened, and then serve in their turn for the production of the *Dies*, on which the design appears again concave, as it is on the *Matrice*. As a very great number of *Punches* have to be produced from the *Matrice*, and a very great number of *Dies* from each *Punch*, it naturally follows that the *Matrice*, or the original *Die*, and the parent of all the others, must be the most perfect attainable model to ensure perfection equally in the *Punches* taken from it, and in the *Dies* struck from the latter. This accounts for the extreme care, attention, and labour which have to be bestowed upon the production of a proper *Matrice*.

A well-made *Matrice* will remain in use for about fifteen years before shewing signs of wear; the *Punches* made from it will last for many months; but the *Dies*, which have to perform the actual work of Coining, will rarely last longer than a day. However, during this one day of their working existence, they will strike off many thousand impressions on Coins—as many, in fact, as 5,000 per hour. As a matter of course, there must be two *Matrices* for each Coin, one for the Obverse, and another for the Reverse; and *Punches* and *Dies* have to be taken from each.

Besides the *Dies*, of which the lower one is fixed on a suitable bed beneath the screw, whilst the upper one rises and descends with the latter, there is another essential part of the Coining apparatus, viz., the

so-called *Collar*,—a flat steel ring about three inches in diameter, with a hole in the centre, exactly fitting the neck of the lower Die, above the face of which it rises at the moment of the stroke. This ring or collar is *grained* inside, or *crenated*, *i.e.*, ribbed vertically. The Blank, under the pressure of the two Dies, expands slightly, which drives the *milled* edge into the ribs of the collar, thereby producing the usual crenated or ribbed edge of the Coin.

The process of thus ribbing the edge of the Coin (which is done to prevent the dishonest from clipping the piece) was formerly called *Milling*, and was done by a separate machine, not unlike the *Milling Machine* described. Each Mint had formerly its own way of *Milling* Coins, which it looked upon as a secret to be jealously guarded. But since the introduction of the *Collar*, the *Stamping* and the *Crenating* are done at one stroke.

The Coins are now ready, and they are delivered to the Bank of England at the rate of 1869 bright new sovereigns, or double that number of half-sovereigns, for every forty pounds of Standard Gold sent into the Mint.*

* In 1849, a Royal Commission was appointed to inquire into the constitution and management of the Mint. This Commission issued an excellent and elaborate Report. At that time the Mint management was a strange mixture of Government Officialism with "private rights" of the *Mint Melter* and the *Corporation of Moneyers*, who made extra profits out of it. Since 1851 all this has been reformed, and the Mint is now entirely under the control of officers appointed and paid by the Crown,

The Mint makes no charge for Coining Gold ; but, as we have already explained, it charges a heavy seignorage on the Silver Coinage.

Here the question arises, whether the Mint does not, after all, make a profit on the Coining of Gold. The Assay Reports in England are always slightly below the true fineness of the Metal ; and it is just possible that, with very careful manipulation, the Mint may realise a small fraction of profit on the Gold Coinage, although we believe the reverse to be the case. However, the suggestion of the possibility of a profit leads on to another question, viz. this : Is it possible always to attain a mathematically correct Standard and absolutely accurate weights ? The reply to this can be no other but that it is *not* possible, as slight variations will always occur, even with the very best machinery, and the most careful manipulation. The Law, acknowledging the difficulty arising from this circumstance, grants the Mint an allowance within certain limits. This allowance is called

The *Remedium* or *Remedy*. If the Coinage on trial is found correct within the limits of the Remedy, it is declared lawful money. The Remedy allowed for the *fineness* of Gold Coin is $\frac{1}{16}$ th carat, equal to $\frac{1}{352}$ or about 3 per mille, or $\frac{2}{3}$ penny per £1. The Remedy for *weight* allows a variation of 12 grains in the lb. Troy, or $\frac{1}{4}$ grain, equal to $\frac{1}{2}$ d per Sovereign.

For Silver, the Remedy for *fineness* is 1 penny-weight = to $4\frac{1}{2}$ per mille, or $\frac{1}{18}$ penny per Shilling ; for *weight* it is 24 grains per lb. Troy, or 4 per mille,

equal to $\frac{1}{20}$ th of a penny per shilling. The Mint is supposed to work considerably within these limits.

The Coining of crowns, half-crowns, and fourpenny bits has been abandoned, and the British Mint now only turns out as current Coin the following :—

Sovereigns	}	Gold.
Half-sovereigns		
Florins	}	Silver.
Shillings		
Sixpences		
Threepences		
Pennies	}	Bronze.
Halfpennies		
Farthings		

The Coining of Gold pieces takes place only from time to time, as the Bank requires it ; but the Mint is almost always busy in Coining Silver or Bronze. The new British Bronze Coinage was first made for the Mint by Messrs. Ralph Heaton and Sons, of Birmingham, whose superior machinery is well known, and who have also executed the Copper Coinage of some Foreign States. The Mint, however, now strikes the Bronze Coinage necessary to keep up the first large supply made by Heaton and Sons. The British Bronze Coins consist of 95 parts of Copper, 4 of Tin, and 1 of Zinc.

The Government exercises some check on the operations of the Master of the Mint, as far as weight and fineness are concerned, by the so-called “Trial of the Pyx.” The Master reserves certain pieces of “each journey” and puts them apart into boxes.

When the Trial of the Pyx is ordered, these boxes are taken to the Treasury Office, where, under the presidency of the Lord Chancellor, a great ceremony takes place. A jury of experts is impanelled, who afterwards proceed to Goldsmiths' Hall, where samples of the coins are weighed, melted and assayed. The jury reports the results, and if they are satisfactory, as they are expected to be, the Master is discharged from all further liability in the matter.

The last Trial of the Pyx took place in 1861. To this subject, as well as to the British Mint generally, the author will have occasion to revert again in the Appendix of this Book.

An order for the inspection of the British Mint can be obtained by forwarding a request to that effect in writing to the Master of the Mint, who appoints a day and hour for the visit, and instructs a special officer to be in attendance to conduct the parties over the Operative Department of the Establishment. An agreeable and instructive half-hour may thus be spent, under the guidance of a most courteous gentleman.

PART II.

CHAPTER I.

PARS OF EXCHANGE.

IN the following Pages we shall describe the different Monetary Systems of the World, and compare the same to the British Coinage, in order to arrive at the so-called *Pars of Exchange*.

The Par of Exchange is the fixed and unalterable rate at which the value of one Monetary Unit or Integer can be determined by the numbers or parts of another, and *vice versa*.

As regards this Par of Exchange, erroneous popular impressions are frequently found to prevail. Thus, the ordinary reader may be under the impression that the £1 is worth 25 francs, and the 20 franc piece accordingly 16 shillings. The German thaler is supposed to be worth exactly three shillings, making the £1 therefore $6\frac{2}{3}$ thalers. This idea of the Par would seem due, in a measure, to the fact that these are simple round figures. In reality, however, the £1 is worth more than 25 francs, the thaler less than three shillings; for if the proportions of fine metal in the respective pieces be determined, it will be found that the £1 is worth about 2d more than 25 francs.

It may be suggested, then, that by simply ascer-

taining the weight and fineness of foreign Coin by actual trial here, we may readily determine its value in British sterling, which value must naturally be the Par of Exchange.

This principle is correct enough, with the exception of the clause, "by actual trial here;" for if foreign Coin be brought over here, to be tried, it may turn out,

1, That the Coin has suffered from abrasion;

2, That although carefully coined, it may not be quite so fine in quality, and quite so full-weighted (even though it should have undergone no loss from abrasion) as it is presumed to be; also, that our method of testing Bullion, and paying for it, differs a little from that of other countries.

These same chances to which foreign Coin is liable are equally inherent also in the British Coinage. We have already had occasion to mention the *Remedies* allowed to the British Mint for slight deviations from the strict letter of the law in the matter of the weight and fineness of the Coin. The foreigner who imports British sovereigns into his country, and tries them there, will consequently most likely find the same differences.

Supposing, for instance, that a new 20 franc piece, tested here, even officially, turns out to be worth 15s 9 $\frac{3}{4}$ d in Gold at the Bank price of 77s 9d per ounce Standard, giving accordingly francs 25·30 as the Par made in England; whilst the sovereign may turn out, by French valuation, worth only francs 25·15 as the Par made in France—neither of these two rates can be called the Par, for the true Par must

be fixed and unalterable. The necessity of this rule may be shown more clearly in a matter of account. By way of illustration, say an English merchant owes francs 2522·50 to a French merchant; in order to remit this amount in sovereigns at francs 25·15 he must send (independently of the charges of forwarding) £100 3s 10d; the French merchant may in his turn also owe £100 to the English merchant; to transmit this he must forward francs 2530. But if they settle the account between them at the Exchange of 25·22½ francs (the intermediate point between the two supposed pars), the Englishman gives and receives exactly £100, and the Frenchman exactly francs 2522·50, just as the accounts stand between them. This medium point, freed on both sides from the chances affecting Coin, in consequence of the want of absolute accuracy in the Coinage, results, as the only true and fixed Par, from the Mintage values, as fixed by law. The Mint law of England says that 1869 sovereigns shall be coined from 40 Troy lbs. Standard Gold (22 carats, or 916·67 fine); the law in France orders francs 3100, equal to 155 Napoleons, to be coined out of the kilogramme weight of Gold 900 fine. From these proportions, independent of all accidental differences in the Coin, and of the charges of forwarding, which act in both directions, the true Par has to be calculated.

Now let us suppose a transaction of this kind to be effected between three different places: say London, Paris, and New York. If each of these were to follow its own one-sided way of deducting the Par from the actual Coin, as tried by them, six different rates of

Exchange would be the result; whilst taking the Mintage values fixed by law for the basis of the calculation, any two of the true Pars will give the true Par between them and the third. The true Pars of Exchange must be fixed in such manner as to agree correctly for all Coinage Systems, whether they be calculated direct from the legal Standards, or *arbitrated* from the *Cross Pars* between foreign countries.

We are induced to point out this principle, because in other works on Exchanges we find considerable looseness in this respect. Mr. Tate, for instance, adopts our system in regard to the French Exchange; but for other Exchanges he takes the "value as found in England" of certain Coin as his basis for the Par.

In following out this principle in the comparative valuation of English and Foreign Gold Coin another consideration arises. In England we have the Gold valuation, and our Mintage rate of 77s 10½d per oz. Standard gives us a fixed rate for Gold; Silver, however, has a variable price, ranging from 60¼d to 62½d per oz.

In certain other countries—Prussia for instance, India, &c.—the Silver valuation prevails, and Gold has a variable price. Between England and these countries it would therefore seem impossible to establish a fixed rate of Exchange. However, it so happens that in France and some other countries the so-called *Double Valuation* exists, both Gold and Silver having a fixed price by law. In France this price stands at one part of Gold to 15½ parts of Silver, and it is this rate which must serve us as a guide in valuing between Gold and Silver generally. And this principle will

indeed practically be found correct; for, with the exception of England—where Gold stands as 1 to $14\frac{1}{2}$ Silver (which latter Metal, however, has only a most limited range of circulation assigned to it by the law of legal tender) this proportion—1 to $15\frac{1}{2}$ —is found to exist universally, within small fractions. Our rate for Silver will therefore be: if 1 oz. Standard Gold (22 carats) is 77s $10\frac{1}{2}$ d, then 1 oz. Standard Silver 222 dwts. fine = 60·8384 pence, or about $60\frac{7}{8}$ d per oz. Standard. This price, when the Exchanges generally are level, will also form the average of the market price here; for at $60\frac{1}{4}$ d Silver goes to the Continent, and it speedily rises to $61\frac{1}{2}$ d or more, when there is a demand for India. We find that in other books on Exchanges the writers give different rates, ranging from 60d to 62d. We believe, however, that our plan is the more correct one, founded as it is upon the average universal price, and the point of neutrality between supply and demand generally.

In our Review of the Coinages of the World we shall limit our attention to the present issues. A description of all the old Coinages would swell the present volume far beyond its legitimate limits, and moreover would be of no real practical use in the matter of the present Exchanges. To the old Coins still in circulation, including some that were struck only a few years back, we shall only passingly allude when necessary.

The present issues of Coin alone, as made by the several Mints of the World, claim our particular attention here, as the basis for the Pars of Exchange.

GREAT BRITAIN.

The Monetary Unit of Great Britain is
 The Gold Pound Sterling,
 divided into 20 Shillings, of
 12 Pence each.

The Coinage is represented by

5 Pounds pieces		}	Gold.
2 " "			
1 " "	Sovereign		
$\frac{1}{2}$ " "	Half Sovereign		
5 Shillings pieces	Crown	}	Silver.
$2\frac{1}{2}$ " "	Half Crown		
2 " "	Florin		
1 Shilling	Shilling		
$\frac{1}{2}$ " "	Sixpence		
$\frac{1}{4}$ " "	Fourpence		
$\frac{1}{4}$ " "	Threepence		
1 Penny pieces	Penny	}	Bronze.
$\frac{1}{2}$ " "	Halfpenny		
$\frac{1}{4}$ " "	Farthing		

The Five pounds and the Two pounds Gold pieces are rarely seen in circulation, as the Mint only strikes a few specimen pieces, which are not intended to be used as part of the Currency.

The Crown, Half Crown, and the Fourpenny piece in Silver are no longer coined now, and those still in circulation will gradually be withdrawn.

The following are the Coins actually struck and issued by the Mint at present, with their supposed full weight and fineness:—

GOLD.

Sovereign . .	oz. 0.25682	Standard 22 carats, or 916.666 fine.
Half Sovereign	„ 0.12841	„ „ „ „

SILVER.

Florin . . .	oz. 0.3636	Standard 222 dwts., or 925 fine.
Shilling . . .	„ 0.1818	„ „ „ „
Sixpence . . .	„ 0.0909	„ „ „ „
Threepence . . .	„ 0.0454	„ „ „ „

BRONZE.

Penny . . .	oz. 0.3038	} Bronze of 95 Copper, 4 Tin, 1 Zinc.
Halfpenny . . .	„ 0.1822	
Farthing . . .	„ 0.0911	

The Gold valuation prevails in England, and Gold Coin is accordingly legal tender to any amount.

The full weight of a new Sovereign ought to be 123.274 grains. If by abrasion or otherwise it is found to weigh less than $122\frac{1}{2}$ grains, it becomes “light,” and ceases to have legal currency.

Silver Coin is legal tender only to the amount of 40 Shillings sterling. Copper or Bronze Coin is legal tender only in Penny pieces to the amount of one Shilling, in Halfpenny pieces and Farthings to the amount of Sixpence.

The Gold Coinage is issued at the Mintage rate of 77s $10\frac{1}{2}$ d per oz., which corresponds to the universal market price of Gold.

The Silver Coinage is issued at a rate much higher than the universal market price of Silver, viz. 66d per oz. Standard, which makes Silver stand to Gold in the proportion of $14\frac{1}{2}$ to 1. The universal price, upon the basis of 1 of Gold to $15\frac{1}{2}$ of Silver, is $60\frac{1}{3}$ d per oz. Standard.

The several Coins are worth accordingly :—

GOLD.		Nominally	Actually
Sovereign . . .	20	Shillings.	20 Shillings.
Half Sovereign . . .	10	„	10 „
SILVER.			
Crown	5	„	4 Shillings $7\frac{1}{3}$ pence.
Half Crown	$2\frac{1}{2}$	„	2 „ $3\frac{2}{3}$ „
Florin	2	„	1 „ $10\frac{2}{5}$ „
Shilling	1	„	0 „ $11\frac{1}{5}$ „
Sixpence	$\frac{1}{2}$	„	0 „ $5\frac{1}{2}$ „
Fourpence	$\frac{1}{3}$	„	0 „ $3\frac{2}{3}$ „
Threepence	$\frac{1}{4}$	„	0 „ $2\frac{1}{4}$ „

At the present average price of Copper, Tin, and Zinc, Bronze is worth 10d per lb. Troy; consequently the actual metallic value of the Bronze Coinage is—

Penny	.	.	about $\frac{1}{4}$ penny.
Halfpenny	.	.	" $\frac{1}{8}$ "
Farthing	.	.	" $\frac{1}{16}$ "

The Old Guinea in circulation before 1816 was worth exactly 21s, at the rate of 77s 10 $\frac{1}{2}$ d per oz. Standard. The Silver Coins struck before that period were coined at the rate of 62d per oz. Standard. The relative value of the Gold and Silver Coinage accordingly stood at that period as 1 of Gold to 15 $\frac{1}{4}$ of Silver.

The prices of Gold at the Bank of England (the only importer of Bullion into the Mint) are—

Buying price	.	.	.	.	77s 9d per oz. Standard.
Selling price	.	.	.	.	77s 10 $\frac{1}{2}$ d " "

At these rates the Bank is bound to deal. The Bank makes no allowance for Silver contained in Refinable Gold.

In the open Market the Bank Rates serve for guidance, subject to the fluctuations of supply and demand. Refinable Gold sells at 77s 10d to 78s per oz. Neither the Bank nor the Mint is obliged to buy or sell Silver. Silver, beyond the limited quantity bought by the Mint for coinage, is altogether a mere article of merchandize; the price of Silver Bullion fluctuates between 60 $\frac{1}{4}$ d to 62 $\frac{1}{2}$ d per oz. Standard, according to the supply coming in, and the demand for the Continent or for India.

Paper Currency.—The Paper Currency is on a Par with the Gold Coinage. The Bank of England issues

Notes of	.	.	.	.	£5
"	.	.	.	.	10
"	.	.	.	.	20
"	.	.	.	.	50
"	.	.	.	.	100
"	.	.	.	.	200
"	.	.	.	.	500
"	.	.	.	.	1000

The Provincial, Scotch, and Irish Banks issue Notes of £1, £2, and upwards.

The £ s d, or British Monetary System, prevails in the Colonies of Australia,* and at the Cape of Good Hope, &c.

Exchange transactions in Sterling money have their own Par at 100, as usually stated. If, for instance, a Banker in Glasgow be applied to to grant a Draft at sight upon London, he is likely to make a small charge upon it, say $\frac{1}{4}$ per cent. For the £100 to be paid in London he will charge $100\frac{1}{4}$ in Glasgow, consequently the Exchange on London in Glasgow stands at $100\frac{1}{4}$, or $\frac{1}{4}$ per cent. Premium. The same will be the case if a Banker in London be required to give a draft on Glasgow: he is also likely to charge $\frac{1}{4}$ per cent. Premium. In both these cases it is assumed that this $\frac{1}{4}$ per cent. reimburses the Banker for the trouble and expense of having to remit £100 to his correspondent, to pay the draft given upon him. But it may so happen that drafts from London on Glasgow are not required, whilst Glasgow draws largely on London, and becomes thus indebted to the London firm in excess. Under such circumstances the Glasgow Banker will hesitate to sell more drafts on London, except at an advanced premium, say $\frac{1}{2}$ per cent.; whilst the London Banker, having money to receive from Glasgow, will gladly draw on the latter place, even without premium. So the Exchange in Glasgow upon London may become quoted at $100\frac{1}{2}$, or $\frac{1}{2}$ above Par; whilst that on Glasgow in London will be at 100, or Par. We give this example here, not as one of frequent actual occurrence, but as an illustration simply of the working of the Par of Exchange.

Where the distances between the two places are very great, as between England and Australia, for instance, these differences become more marked. Australia is always indebted to England, and is compelled to send Bullion here. The transmission, by sailing vessel, takes about six months, and the charges for Freight and Insurance amount to about $1\frac{1}{2}$ per cent. Now, supposing that an Australian is indebted to an English Merchant, and has

* The Gold Coinage of the Sydney Mint is now legal tender in Great Britain.

promised to send his Creditor in England £100 by the 1st July, he must ship to him £100 in Gold, say on the 1st January preceeding, and the charges of forwarding, &c. will cost him £1½. For the £100 he has accordingly to pay £101½. Instead of shipping Gold, he may go to a Bank for a draft, and pay his £101½ there. The Exchange on England is therefore 101½ in Australia.

The English Merchant, however, or the Australian Bank Agency in London, may be applied to for a Bill on Australia. A draft may then be made on the parties in Australia for £101½—the same amount which they would have to pay if they were to send Gold or a Bill for £100 to England.

Or, if the draft on Australia be made exactly for £100, the Creditor or Seller here might take £98½ for it; thus the Exchange on Australia in London would stand at 98½, or £1½ per cent. discount.

And, if the question turned on payment by the Australian on the 1st January 1869, such payment being due here on the 1st July 1868, the Creditor here might draw his draft on the 1st July 1868, arriving for payment in Australia on the 1st January 1869. He would thus gain a full year's interest in the bargain, discount being, say 3 per cent. per annum. He could then actually afford to sell his bill at 95½ per cent., or 4½ per cent. discount. In the current trade transactions this is not done, as the interest on the whole is balanced otherwise. The variations in freight and charges, supply and demand, &c., may occasionally alter the rate of Exchange; but upon the basis of 1½ per cent., so long as Australia is indebted to us, the Exchange in Australia on London stands at 101½; Exchange in London on Australia at 98½.

the Actual Par of Exchange being nevertheless 100.

FRANCE.

The Monetary Unit of France is
The Franc,
divided into 100 Centimes.

The Coinage is represented by

100	Francs	pieces			
50	"	"			} Gold.
40	"	"			
20	"	"	Napoléon		
10	"	"	$\frac{1}{2}$ Napoléon		
5	"	"	$\frac{1}{4}$ Napoléon		
5	Francs	pieces			} Silver.
2	"	"			
1	"	"			
$\frac{1}{2}$	"	"			
$\frac{1}{4}$	"	"			
$\frac{1}{8}$	"	"			} Copper.
10	Centimes	pieces	Décime		
5	"	"	Sou		

The 100 francs and 50 francs Gold pieces have been coined in considerable numbers lately, and are very often met with in circulation; a coin of 25 francs has also been made by way of trial.

The coining of the 40 francs pieces and the one-fifth franc pieces has been discontinued.

The double valuation prevails in France: both Gold and Silver are legal tender in that Country. In Silver, however, the five francs piece alone continues still as legal tender to any amount; the fractional Silver Coin below the value of five francs are, since 1867, legal tender only to the amount of fcs. 50. Hitherto, all the Coins of France, both Gold and Silver, were struck 900 fine; but with regard to two francs pieces and the fractions below, the Government, under

a Convention with Belgium, Switzerland, and Italy, has reduced the fineness to 835, without increasing the weight of the Coin. These smaller Silver Coins therefore are no longer of full intrinsic value, and are simply forced Currency, standing on the same footing as the English Silver Coinage. The only difference between the French and the English system, is that, whereas the latter has no Silver Coin of full intrinsic value, France maintains the five francs piece at its full standard fineness and weight. The five francs piece thus forms the connecting link between the two Coinages, by which the relative value of Gold and Silver is maintained at one of the former to $15\frac{1}{2}$ of the latter, and the double valuation by both Gold and Silver is upheld.

The Monetary Convention which lately met in Paris decided in favour of the single Gold Standard. It is therefore possible that at some future time the five francs Silver piece may also become debased, and cease to be legal tender. (Upon this subject generally we refer the reader to the Chapter on the Defence of the Double Standard, in the Appendix.)

According to the French Mint Law,

One Kilogramme* of Gold of 900 fine (French Standard)
is to be coined into fcs. 3100.

One Kilogramme of Silver of 900 fine is to be coined into
fcs. 200.

This gives exactly one part of Gold for $15\frac{1}{2}$ parts of Silver. Up to 1867 all the Coins were made in conformity with this Law; but, as already stated, the smaller Silver Coinage from two francs downwards, is now made 835 fine; so that the above regulation, in so far as Silver is concerned, now only applies to five francs pieces. The two francs, one franc, half franc, quarter franc, and one-fifth franc pieces, struck before 1867, are being called in; and, in spite of their abraded state, they yield a good profit to the State, which issues the new debased pieces instead.

* One Kilogramme equal 32·150725 oz. Troy; 1 oz. Troy equal 31·1035 grammes.

The subjoined Table shows the legal weight and fineness of the several Coins now issued by the French Mint:—

		Grammes.	Millièmes.
Gold	100 Francs pieces	32·258	900
	50 " "	16·129	"
	20 " "	6·451	"
	10 " "	3·225	"
	5 " "	1·612	"
Silver	5 Francs pieces	25·000	900
	2 " "	10·000	835
	1 Franc "	5·000	"
	$\frac{1}{2}$ " "	2·500	"

THE COPPER OR BRONZE COINAGE.

10 Centimes piece	10 Grammes	Bronze. 95 Copper, 4 Tin, 1 Zinc.
5 " "	5 " "	

The subjoined Table shows the nominal value and the actual value of the present French Coins at the Mintage Rates of fcs. 3,100 per kilogramme for Gold; fs. 200 per kilogramme for Silver, both 900 fine:—

GOLD.		Nominal Value.	Actual Value.
100 Francs pieces.		100 Francs.	100 Francs.
50 " "		50 "	50 "
20 " "		20 "	20 "
10 " "		10 "	10 "
5 " "		5 "	5 "
SILVER.			
5 Francs pieces.		5 "	5 "
2 " "		2 "	1·85 $\frac{1}{2}$ "
1 Franc "		1 "	0·92 $\frac{1}{2}$ "
$\frac{1}{2}$ " "		$\frac{1}{2}$ "	0·46 "

* We must remind the reader that we give here the supposed full weight and fineness, as theoretically fixed by law. Practically there are slight deviations from the exact legal Standard, at least with regard to fineness; for in this respect all Mints alike work more or less with the *Remedy* allowed. With regard to weight, it may be observed that, although the aggregate weight of a number of new pieces just issued by the Mint may be correct, yet abrasion will soon reduce that of single pieces.

The Paris Mint, whose operative department is worked by Moneyers under contract, charges at the rate of fcs. 6·70 per kilogramme of Gold 900 fine, coined into fcs. 3,100, which makes the actual Mint price for Gold 900 fine, fcs. 3093·30. The Mint price of pure Gold, or 1000 fine, consequently is fcs. 3437 per kilogramme.

For Silver coined into 200 francs the kilogramme 900 fine the Mint charges fcs. 1·50 for coinage; the actual Mint price for 900 fine Silver is accordingly fcs. 198·50, and the price for pure Silver fcs. 220·56 per kilogramme. The Mint coins five francs pieces only when specially demanded.

There are Branch Mints at Bordeaux and Strasbourg. The Coins struck in Paris bear the initial letter A; at Bordeaux the letter K; and at Strasbourg the letters BB.

The Bank of France is the largest importer of Bullion into the French Mints; but the public are also at liberty to import. The Mint gives, in return for the Bullion sent in, Mint certificates, payable usually in ten days, or at longer dates if the supply exceeds the capacity of the working department.

The *Remedy* allowed to the Moneyers is, for Gold Coin, two per mille in fineness, and two per mille in weight; for Silver coin, three per mille in fineness and weight. It is proposed, however, to reduce the *Remedy* for Gold in future to one per mille.

The Moneyers do not profit by the *Remedy*. Their Coinage is regularly assayed by the Government to 1000 exact, and they are debited with any deficiency under 900 fine, or credited with the surplus over 900 fine, provided neither difference do exceed two per mille. As a rule, they work under 900 fine. For Coin 899·6 fine, or 898·0 fine, they accordingly are debited 0·4 per mille, and 2 per mille respectively. The State thus obtains all the profit that may result from the *Remedy*, but the State does not seek to make this profit; on the contrary, everything is done to ensure the greatest attainable correctness of the Coin.

In the open Bullion market Bullion is still quoted according to a now obsolete Mint Tariff (abolished in 1835), which made fine Gold worth fcs. 3434·44 per kilogramme; fine Silver worth 218·89

per kilogramme. These prices are subject to Premium or Discount, according to supply and demand.

In dealing in Gold it is always first agreed whether the price shall be fixed by the *Tarif de la Monnaie*, meaning the present rates of the Mint, or by the *Tarif du Commerce*, as the old Tariff is now termed. For Silver the latter is generally taken.

The Decimal System appears to great advantage in the French method of valuing Bullion, simple multiplication being all that is required to get the result.

The price of the different degrees of fineness from 1000 downwards (if such a table is at hand) need only be multiplied by the kilogramme to find the amount in francs; or the price of fine gold may first be multiplied by the fineness, and the result by the weight

Thus kilos. 10·155, of 921 fine, at fs. 3437 per kilogramme fine, by the *Tarif de la Monnaie*, are worth

$$3437 \times 921 = 3165\cdot47 \times$$

$$10\cdot155 = \text{fs. } 32145\cdot35$$

or for Silver (by the *Tarif du Commerce* price) kilos. 31·735—863 fine, at fcs. 218·89 per kilogramme fine,

$$218\cdot89 \times 863 = 188\cdot90 \times$$

$$51\cdot735 = \text{fs. } 9772\cdot74$$

Additional examples of calculations on this system, and invoices, by way of illustration, will be given hereafter in the chapter on *Arbitrations in Bullion*.

French Assays are made and reported to $\frac{1}{10000}$ exact; thus we find Gold and Silver reported, for instance, as 850·5, 913·2, 995·7, &c., British Assays reporting only to one-eighth grain or $\frac{1}{8}$ part exact. The French Assays are thus much more accurately reported than English Assays.

The charge for refining Gold amounts to five francs per kilogramme, equal to $22\frac{1}{2}$ millièmes of fine Silver (the charge in England is 83 millièmes); and the French Mint buys Refinable Gold at this rate. For Silver the charge is one millième of Gold, or about $15\frac{1}{2}$ per mille on the value; but, on the other hand, a Premium, ranging from 14 to 18 per mille, is paid for Doré Silver, according to the market price of Silver and the quality of the Bar.

Paper Currency.—The Bank of France issues

Notes of	50 francs.
„	100 „
„	200 „
„	500 „
„	1000 „

It is the only Institution in France allowed to issue Paper Money. The Bank of France Notes are on a full par with the Gold Coinage.

We now come to our first transaction in Exchanges. What is the true Par of Exchange between England and France? We have told the reader before that this Par has to be established upon the full weight and fineness of the Coin fixed by the Mintage Law, and independently of charge for coinage and of allowance for remedy, abrasion, freight, &c.

We give our calculations here in decimals, carrying the decimal as far as practicable, in order to prove the true Par with the utmost attainable correctness :

A Napoleon of 20 francs weighs

6·45161 grammes,

equal to oz. 0·207424 Troy,

of 900 or carats 21·6 decimal fine ;

which, at 22 carats, gives 0·203653 ozs. Standard ;

this, at 77s 10½d, or £3·89375 decimal per oz.,

makes the value of the 20 francs piece £0·792974, or

15s 10⅓d,

and gives an Exchange of fs. 25·2215 per £.

A Sovereign, of which 1869 go to 40 lbs. Troy, or 480 ozs. Standard Gold, by the chain rule, as follows :

How many francs = 1 Sovereign ?

If Sovereigns 1869 = 480 oz. Standard

If ozs. Standard 24 = 22 fine Gold

If ozs. 1 = 31·1035 grammes

And fine 900 = 3100 francs per kilogramme

403704 : 1018204176

= fs. 25·2215

Or, by Bullion—

1 kilogramme 900 Gold gives 3100 francs; 1 kilogramme weighs oz. 32·150725 Troy; accordingly,

How many ozs. Standard are = 32·150725 ozs. Troy, 900 or carats 21·6 fine

If 1000 = 900 fine Gold

If fine Gold 22 = 24 oz. Standard

22 :: 69445566

= oz. 31·566165 Standard

At 77s 10½d per oz. = £122·911 decimals

Divided into 3100 francs = fs. 25·2215

It is almost needless to add that the commonly accepted Par of fcs. 25 per £1 is altogether a popular error.

The Actual Mintage Par of Exchange between London and Paris is—

£1 = fcs. 25·2215

or fcs. 25·22½ centimes.

For all practical purposes, however, we may call the Par of Exchange fcs. 25·22½ centimes.

BELGIUM.

The Monetary Unit of Belgium is
The Franc,
divided into 100 Centimes.

According to the Monetary Convention concluded in 1865 between France, Belgium, Italy, and Switzerland, the new Coinages of the four States are precisely identical in weight, fineness, and legal value, and the Coins struck by all and either of the States of the Convention have free circulation within the limits of the Union.

(The Belgium 2½ francs pieces and the Nickel Coins (250 Nickel,

750 Copper) are no longer issued. The old Coinages of Souverains, Crowns, Ducats, Guilders, Shillings, &c., have entirely disappeared from circulation.)

The **Paper Currency** is on a full par of value with the Gold Coinage. The issue is made by the Banque Nationale.

The Mint Par of Exchange between London and Brussels is—

$$\begin{aligned} \text{£1} &= \text{fcs. } 25\cdot2215, \\ &\text{or fs. } 25\cdot22\frac{1}{2}. \end{aligned}$$

SWITZERLAND.

The Monetary Unit of Switzerland is
The Franc,
divided into 100 Centimes.

The present Coinage is in every way identical with that of the other members of the French Monetary Union. Switzerland does not coin Gold pieces, and the principal supply of them comes from France.

(Before the final adoption of the Franc throughout Switzerland generally (1850), the different Cantons coined Thalers, Neuthalers, Guilders, Francs, and smaller Coins, which are now withdrawn from circulation.)

The **Paper Currency** is on a par of value with the Coinage. The issue is made by several Banks, and is quite local.

The Mint Par of Exchange with England is

$$\begin{aligned} \text{£1} &= \text{fcs. } 25\cdot2215, \\ &\text{or fs. } 25\cdot22\frac{1}{2}. \end{aligned}$$

ITALY.

The Monetary Unit of the Kingdom of Italy is
The Franc or Lira Italiana,
divided into 100 Centesimi.

The Coinage is identically the same as in France, Belgium, and Switzerland.

(Before the unification of the present Kingdom was accomplished, all the petty States of Italy issued their own Coinages. Thus in Venice, for instance, the Lira Austriaca (value about $85\frac{1}{2}$ French Centimes) was in use; in Tuscany, the Lira Toscana (value about 82 French Centimes); in Naples, the Ducat (value fcs. 4·33,) as money of account, the Gold ounce (fcs. 129·44), the Scudo, in Silver (fcs. 5·10); in Palermo, the Sicilian ounce (fcs. 12·75), with smaller divisionary Coins for each.)

The confusion in the Coinages of Italy before the unification of that Country was only exceeded by that reigning formerly in the other still much larger disunited political body, Germany. The old Italian Coinages are now obsolete, and the Lira Italiana, which is the exact equivalent of the franc, is the practical Unit for all purposes of Exchange.

In **Rome alone**, under the Papal Government, the Unit is still the old Roman Scudo, divided into 100 Bajochi.

The other Roman Coins are

GOLD.	SILVER.
10 Scudi pieces	1 Scudo
5 " "	$\frac{1}{2}$ " = 50 Bajochi
$2\frac{1}{2}$ " "	$\frac{1}{3}$ " = 20 "
1 Scudo "	$\frac{1}{10}$ " = 10 "
	$\frac{1}{20}$ " = 5 "

with Copper Coins of smaller value.

The value of the Scudo of account is 51·2 pence, and the Par of Exchange is accordingly 46·875 Paoli (Paolo $\frac{1}{16}$ th Scudo) per £ ster-

ling; and the same result is arrived at if we compute the Par by the Mint value of the Papal Gold Coinage. The Roman Government is taking steps now for the issue of a Coinage in accordance with the rest of Italy.

Paper Currency.—The Paper Currency of Italy is much depreciated, Gold is at a premium varying (1868) from 12 to 18 per cent. This makes the Exchange for the Paper Currency per £1 from fcs. 28 to fcs. 29·75; for, unless bills drawn on Italy bear upon them the express direction that they are to be paid in Gold or Silver, they will be paid in Paper Currency. The Italian Government has not only been compelled, by pressing political circumstances, and by wars, to incur an enormous debt; but, as the revenue of the State falls much short of the expenditure, and as there is great want of money, the Italian Government has been driven to the expedient of creating a *forced* Paper Currency. This is an illustration in point of what we have characterised, in one of the earlier chapters of this work, as a *third class* Bank Note issue.

The exact amount in circulation of this forced note issue is not known; but the Finance Minister of the Kingdom of Italy lately stated that 528 millions francs in Gold would be necessary to withdraw the notes. This leads us to infer that from 600 to 650 millions of francs have been issued. It is to be hoped that the increasing prosperity of the Country, and the good management of the Government will soon succeed in relieving this depreciated Paper Money.

The Mint Par of Exchange between Italy and England is

£1 = fcs. 25·2215 ;

but owing to the forced Paper Currency, which is at present legal tender in the country, the actual Par varies with the premium on Metallic Money. All the valuations of Italian Money computed in Paper Currency are as much higher as this premium per cent., and with it rises the Paper Par of Exchange with London, which in the early part of 1868, stood—

Fcs. 28·50 to 28·75 per £1.

GERMANY.

In Germany there are several systems of Monetary Valuation.

The North German Valuation.

The Thaler,
divided into 30 Groschen, of
12 Pfenninge each,

the Currency of the greater part of North Germany, with Berlin for its Chief City.

The South German Valuation.

The Florin (Gulden),
divided into 60 Kreutzer,

the Currency of the whole of South Germany, with Frankfort-on-the-Maine for its chief representative Town.

The Valuation of the Hanse Towns.

The Mark Banco,
divided into 16 Schillinge,

constitutes the Money of Account in the free Cities of Hamburg and Lübeck.

The Louis d'Or Thaler,
divided into 72 Groten,

constitutes the Money of Account of the free City of Bremen.

We will consider these several systems of valuation in succession, as represented by Berlin, Frankfort-on-the-Maine, Hamburg, and Bremen.

Before 1866 the Austrian Florin constituted the basis of a fifth system of valuation in Germany; but as Austria forms now no longer a part of the political organisation of Germany, we shall devote a separate chapter to the Austrian Exchange.

Previously to the recent energetic and practical movement for unity, Germany, divided into a number of small States, under the almost absolute sway of a variety of Governments, was *par excellence* the land of the most bewildering confusion of Coinages. Each State struck its own Coin; every petty prince figured upon the Metal Currency of his dominion. Some of these small potentates struck Thalers, and even these not always upon the same standard of Coinage; others struck Gulden, of different descriptions, with odd subdividiary pieces, to make confusion worse confounded. There were also a variety of Gold Coins of different denominations. Side by side with this array of indigenous Coins there circulated also Foreign Coins from nearly every part of the World. Indeed, the circulation of Foreign Coins continues in Germany to the present day. Napoleons, Imperials, Sovereigns, Eagles, Ducats, Five Francs Pieces, and smaller French Silver Coin, Dollars, and Roubles; in short, anything in the shape of Gold or Silver Coin may be passed in Germany without trouble, at the hotels, shops, or banks, at certain understood rates of Exchange. The English shop keeper or the French restaurateur generally looks upon foreign Coins as something not much better than counterfeit money, only fit to be ranked with counters; and nothing but the Coin of his own country will suit him. The German's greater appreciation of the character of foreign Coinages is no doubt highly creditable to his intelligence; but, from a national point of view, it must be admitted it looks like a sign of great political weakness.

The English traveller in Germany must be sorely puzzled even now with the different Coinages still having "course" there, and changing at nearly every frontier between the several States, and with the singular and worn appearance of the small change which he gets, and the numerous dirty notes, representing insignificant amounts of money. This is not to be wondered at, since even the native German, to the manner born, is hardly able to thoroughly master and command the Coinage Babel of his country.

As a matter of record, it may be stated here that the Cologne Mark, equal 3609 Troy grains, was formerly the principal weight for Gold and Silver. (Even this weight was not the same throughout Germany, the Hamburg Cologne Mark, for instance, weighing only 3608 Troy grains.)

Upon this weight a number of so-called *Münzfüsse*, or Standards of Coinage, were based; to wit:

The Leipzig Münzfuss, of 12 Thaler, or 18 Gulden or Guilders, to the Mark of fine Silver (the Saxon Species Thaler.)

The Berlin Münzfuss of 14 Thaler, or 21 Guilders per Mark of fine Silver.

The Conventionsfuss of $13\frac{1}{2}$ Thaler, or 20 Florins per Mark of fine Silver.

The 24 Guldenfuss of 24 Florins per Mark (abolished in 1837).

The $24\frac{1}{2}$ Guldenfuss of South-West Germany.

The Schleswig Holstein Courantfuss of $11\frac{2}{3}$ Thaler per Mark of fine Silver.

The Lübeck Münzfuss of $11\frac{1}{3}$ Thaler, or 34 Marks Courant.

The Hamburg Mark Banco valuation, at the rate of $27\frac{1}{4}$ Marks Banco per Mark for Silver (still in use).

The Bremen Louis d'Or valuation (still in use).

From this formidable list of Coinage Standards some notion may be gathered of the confusion which prevailed in the monetary arrangements of the country. Under the Zollverein several attempts were made to bring the Thaler and Gulden Coinage more into unison. These attempts met with some, though but indifferent success, until, in 1857, a Convention of the German States met at Vienna, at which it was agreed:—

To adopt as the Standard weight for Bullion the new *Münzpfund* (Mint Pound). This Münzpfund is exactly one-half of a French kilogramme, and is divided into 500 grammes (oz. Troy 16·0753625). This was a great advance.

The next difficulty was to establish a better and more manageable proportion between the three principal Coinages, viz. :

The Thaler	}	of which 14 made a Mark fine.		
(14 Thalerfuss)				
The Austrian Gulden . .	}	"	20	" "
(20 Guldenfuss)				
The South German	}	"	24 $\frac{1}{2}$	" "
Gulden				
(24 $\frac{1}{2}$ Guldenfuss)				

This proved a task of considerable difficulty; however, it was finally agreed to coin, from the Mint Pound Fine Silver,

30 Thaler (Norddeutsche Währung, or North German valuation).

45 Austrian Gulden (Österreichische Währung, or Austrian valuation).

52 $\frac{1}{2}$ South German (Süddeutsche Währung, or South German valuation).

Thus making 2 Thaler equal to 3 Austrian and 3 $\frac{1}{2}$ South German Gulden. Pieces of this value were struck as *Vereinsmünze* (Union Coinage), with 1 Thaler pieces, Guilder pieces, &c., all of them 900 fine. Hamburg and Bremen, however, continued their money of account.

The Silver valuation is the ruling Standard in Germany; but the Convention agreed also to coin 50 Gold Crowns, or 100 Gold Half Crowns (Deutsche Kronen and Halbe Kronen), from the Mint Pound fine Gold; the value of these in Silver Thaler being about 9 Thaler 10 Groschen, varying with the greater or lesser demand for Gold. These Gold pieces have been coined in fair quantities, but they are not much used as yet, the old Gold Coins still keeping their place. Upon the whole, Silver remains as yet the great staple of the German Coinage.

Austria, since the separation from Germany, is now no longer bound by the Convention; still there seems to be no reason why she should depart from the actual system. She has, however, declared that she considers herself no longer bound by the Convention of 1852.

After this brief abstract of the recent History of the German Coinage, given here by way of introduction, we will now proceed to the consideration of the four descriptions of Coinage to which the former chaos is now reduced.

NORTH GERMANY.

Represented by Berlin.

The Monetary Unit is
 The Silver Thaler,
 divided into 30 Groschen,
 of 12 Pfenninge each.

The Thaler is coined at the rate of 30 per Mint Pound fine
 Silver as the

**NORD DEUTSCHE WÄHRUNG, OR NORTH GERMAN
VALUATION.**

The Coinage of Prussia is represented by

	11 $\frac{1}{3}$	Thaler pieces	Double Frederick	}	Gold.
	5 $\frac{2}{3}$	"	" Single "		
	2 $\frac{2}{3}$	"	" Half "		
About	9 $\frac{3}{10}$	"	" Gold Crown		
"	4 $\frac{1}{2}$	"	" Gold Half Crown	}	Silver.
	2	Thaler pieces			
	1	"	"		
	$\frac{1}{3}$	"	"		
	$\frac{1}{6}$	"	"		
	$\frac{1}{12}$	"	"		
	$\frac{1}{30}$	"	"		
	$\frac{1}{60}$	"	"		
	4	Pfenninge pieces		}	Copper.
	3	"	"		
	2	"	"		
	1	"	"		

The same system of Coinage prevailed more or less in the other
 North German States; the Gold Coins were generally of the same
 value, but they bore a variety of denominations, such as Augustus

d'Or, Wilhelm d'Or, Louis d'Or, &c., derived from the name of the reigning Sovereign.

The Frederick d'Or now no longer issued, was originally coined as worth Thaler 5 in Gold, equal to Thaler 5 20 Groschen in Silver; and at this latter rate the Prussian Government now receives it; the other German Louis d'Or, or Pistoles, are very nearly the same value, varying simply to the extent of a few Groschen Coinage.

The only Gold pieces that are coined at present are the Gold Krone, of which 50, and the Gold Halbe Krone, of which 100 make a Mint Pound fine. These Coins are Handelsmünze, or Commercial money, and they vary in value with the greater or lesser demand for Gold; Silver alone is the fixed Standard, or legal Currency (*Courant Münze*). Taking the proportion of 1 Gold to $15\frac{1}{2}$ Silver, the Krone is worth $9\frac{1}{2}$ Thaler; but it is frequently quoted a trifle below this rate. The numerous old Silver Coins of all sorts of weights and fineness we need not mention here.

The subjoined Table gives the weight and fineness of the actual Coinage of the present day:—

GOLD.			
Weight in Grammes.			
Krone	11·111	900	fine.
Halbe Krone	5·556	900	„
SILVER.			
2 Thaler pieces	37·0370	900	fine.
1 „ „	18·5185	900	„
$\frac{1}{2}$ „ „	5·3419	520	„
$\frac{1}{4}$ „ „	3·2206	375	„
$\frac{1}{10}$ „ „	1·2882	220	„
$\frac{1}{20}$ „ „	0·6441	220	„

And Copper Coins of 1 Pfénning, and 2, 3, and 4 Pfénninge.

The lower description of the Silver Coin, the small change pieces (*Scheidemünze*), from one-twelfth Thaler downward, are, it will be seen, of very low metallic quality. The Groschen actually contains more than three-fourths Copper.

The value of these several Coins in Thaler is:—

GOLD.		As computed upon the rate of 1 Gold to 15½ Silver, but varying in the Market with the greater or lesser demand for Gold.
Gold Crown	Thl. 9 10 Groschen	
Gold Half Crown	„ 4 20 „	
SILVER.		
	Nominal Value.	Real Value.
2 Thaler pieces	2 Thaler	2 Thaler
1 „ „	1 „	1 „
½ „ „	5 Groschen	5 Groschen
⅓ „ „	2 Groschen 6 Pfenninge	2 Gr. 2⅓ Pf.
⅙ „ „	1 Groschen or 12 Pfenninge	6⅓ Pfenninge
⅛ „ „	6 Pfenninge	3⅓ „

Gold Coin is not legal tender in the North of Germany. The Silver Thaler is legal tender to any amount. The small change below the one-sixth Thaler is limited to that amount as legal tender.

North Germany, with her Silver Valuation, affords us then an illustration of a State the reverse of that of England, where the Gold Standard rules. There is this difference, however, that the Prussian Gold Coinage is struck in strict conformity with the universal price of Gold, without profit to the State; which certainly is not the case with the Silver Coinage in England.

The Prussian Mint buys Silver at prices varying from 29¼ to 30 Thaler per Mint Pound fine. The Mint is not bound to buy Silver, but makes its purchases at its own discretion, and according to the quantity and quality of the Silver offered. In buying Silver the Mint always seeks to include in the price its own charge for Coinage, and, accordingly, being bound to strike 30 Thaler from the Mint Pound weight of fine Silver, it endeavours to purchase its Silver as much as possible under this rate.

The Prussian Mint does not buy Gold, but it coins Bars, or re-coins old Gold pieces into 50 Crowns per Mint Pound fine, charging two-fifths per cent. for Coinage. Payment in Gold Crowns is made at once, without previous issue of Mint Certificates.

Computing the value of the Gold Crown at 9½ Thaler on the average, the price of the Mint Pound fine Gold is Thl. 466·20 Sgr.

Less ⅓ per cent. for Coinage 1·26 Sgr.

Thl. 464·24 Sgr.

It is about this figure that the Market price turns. Thus on 12th

August 1867, the Market price of fine Gold was quoted at Thl. 464·11, and the Gold Crown at Thl. 9·8 Sgr. On the 4th January 1868, the price was Thl. 469½, the Gold Crown being quoted at Thl. 9·10¼ Sgr. (Gold seems to have risen in value in Berlin since the Monetary Convention in Paris).

The Remedy allowed for Gold Coins is 2½ per mille for weight, and 2 per mille for fineness; for the larger Silver Coins 3 per mille for weight, and 3 per mille for fineness; for the Divisionary Coinage the allowance must be larger.

Paper Currency. — The Paper Money of the North German Confederation is on a Par with Metallic Coin. The issue is made by the State Banks and Treasuries, in Notes from 1 Thaler up to 500 Thaler.

The Mint Par of Exchange between Berlin and London cannot be made direct from Gold Coin, because Gold, which has a fixed value in England, has a variable price in Berlin; nor from Silver Coin, because Silver has a fixed price in Berlin, but a variable price in London. The rate must therefore be arbitrated through the Coinage of another country, say France, where both Gold and Silver have fixed prices. This arbitration is made on the basis of 1 part of Gold to 15½ parts of Silver, and will be found to answer correctly in practice; for, excepting the slight variations in Berlin in the Kurs (price) of Gold Crowns, the practical proportion of value between Gold and Silver in Prussia is as 1 to 15½, consequently by chain rule—

How many Thaler = £1

If £3·89375 = 1 oz. Standard Gold

Standard Gold oz. 24 = 22 oz. fine

Fine Gold oz. 1 = 31·1035 grammes fine

Fine Gold gramme 1 = 15·5 grammes fine Silver

Fine Silver grammes 500 = 30 Thaler

= 6·8098 Thaler

making the Thaler equal to 35·243 pence, or 2s 11¼d.

The true Mint Par of Exchange between London and Berlin is therefore

£1 = Thl. 6·24½ Silbergroschen.

SOUTH GERMANY,

Represented by Frankfort-on-the-Maine.

The Monetary Unit is
The Silver Florin or Gulden,
divided into 60 Kreuzer,
of 4 Heller each.

The Florin being coined at the rate of $52\frac{1}{2}$ per Mint Pound fine Silver as the

**SÜD DEUTSCHE WÄHRUNG, or SOUTH GERMAN
VALUATION.**

The States of Bavaria, Würtemberg, Baden, Nassau, Frankfort-on-the-Maine, Hessen Darmstadt, &c., have always endeavoured to assimilate their Coinage as much as possible, even before the Treaty of 1857. The Coinage is represented by

10 Gulden pieces	}	(Struck by Baden, Hessen and Würtemberg.)	}	Gold.		
5 " "						
5½ Gulden Ducats	{	(Struck by most of the States.)				
16⅓ Gulden Gold Crown						
8⅙ " " Half Crown						
3½ Gulden pieces	}		}	Silver.		
2 " "						
1¾ " "						
1 " "						
½ " "						
¼ " "						
⅒ " "						
		6 Kreuzer	}			
⅓ " "		3 "				
⅙ " "		1 "				

And in Copper, 1 Kreuzer, $\frac{1}{2}$ Kreuzer, } Copper.
and $\frac{1}{4}$ Kreuzer (Heller) pieces

Of the Gold Coins, the 10 and 5 Gulden pieces and the Ducats are now no longer struck; the Gold Crowns alone are issued. However, only a few of these are in actual circulation, and they have a variable *Kurs* (price). Foreign Gold Coins, such as Sovereigns, Napoleons, &c., are much used. Of the Silver Coins, the $3\frac{1}{2}$ and $1\frac{1}{4}$ Gulden pieces correspond to the North German 2 Thaler and 1 Thaler pieces, in accordance with the Monetary Convention of 1857, and are called *Vereinsmünze* (Union Coin).

The old Kronen Thaler and other Coins formerly in use are now almost entirely withdrawn from circulation.

The wretched small change of the South German States, represented by worn and coppery looking Kreuzer pieces, must have struck every English traveller.

The subjoined Table shows the legal weight and fineness of the actual Coinage of the present day :—

GOLD.

Weight in Grammes.

Krone	11·111	900 fine
Halbe Krone	5·556	„

SILVER.

$3\frac{1}{2}$ Gulden piece	37·0370	900 fine
2 „	21·1640	„
$1\frac{1}{4}$ „	18·5185	„
1 „	10·5820	„
$\frac{1}{2}$ „	5·2910	„
$\frac{1}{10}$ „ (6 Kreuzer)	2·598	333 fine
$\frac{1}{20}$ „ (3 „)	1·299	„
$\frac{1}{40}$ „ (1 „)	0·779	156 fine

The value of these Coins, expressed in Gulden, is

GOLD.

	Nominal Value.	Actual Value.
Gold Krone	$16\frac{1}{3}$ Gulden	} Varying in <i>Kurs</i> or price from 16 to $16\frac{1}{3}$ Gulden.
Gold Halbe Krone	$8\frac{1}{3}$ „	

SILVER.		
	Nominal Value.	Actual Value.
$3\frac{1}{2}$ Gulden pieces	$3\frac{1}{2}$ Gulden	3·30 Kreuzer.
2 "	2 "	2
$1\frac{3}{4}$ "	$1\frac{3}{4}$ "	1·45 Kreuzer.
1 "	1 "	1
$\frac{1}{2}$ "	30 Kreuzer	30 Kreuzer.
$\frac{1}{10}$ "	6 "	$5\frac{1}{2}$ "
$\frac{1}{20}$ "	3 "	$2\frac{1}{2}$ "
$\frac{1}{60}$ "	1 "	$\frac{3}{4}$ "

Paper Currency. — The Bank Notes of Frankfort and the South German States are on a Par of value with the Coinage.

The Mints of South Germany (for every State has a Mint of its own), buy Silver per Mint Pound fine at the best rates they can, varying from 52 to $52\frac{1}{2}$ Gulden. They are not compelled to purchase. Gold they coin and re-coin, giving 50 Gold Crowns per Mint Pound fine, the same as in Berlin; the price of Gold in the Market varies from 805 to 812 Gulden per Mint Pound fine. Frankfort is not a large Market for Bullion.

The Silver valuation ruling in South Germany, the Par of Exchange must again be arbitrated upon the basis of 1 part Gold to $15\frac{1}{2}$ parts Silver, calculated for the Mint Pound fine of $52\frac{1}{2}$ Gulden.

How much in £ is 1 Mint pound = 500 grammes.

If 31·1035 = 1 oz.

If fine Silver $15\frac{1}{2}$ = 1 fine Gold.

If fine Gold 22 = 24 Standard.

If Standard oz. 1 = £3·89375.

= £4·4054.

According to the Union Coin valuation (30 Thaler equal to $52\frac{1}{2}$ Florins) the Florin is worth 20·139d (1s 8½d); but there are in reality only 52·3828 Florins to the Mint Pound fine, so that the full weight Forin is worth 20·182 pence (1s 8½d). **The Par of Exchange** must, however, be taken upon the basis of $52\frac{1}{2}$ Gulden per Mint Pound, and is **between London and Frankfort**

£10 = Fl. 119·171 or Fl. 119·10 Kreuzer.

HANSE TOWNS.**HAMBURG.**

The Monetary Unit of the Town of Hamburg is
The Mark Banco,
divided into 16 Schillinge,
of 12 Pfenninge each.

But this Unit does not exist in the shape of Coin ;
it constitutes simply the money of account between
Merchants, in which is recorded the respective owner-
ship of each in a large Stock of Silver Bullion lying
in the Vaults of the Bank of Hamburg.

The circulating metallic money is called Mark Courant, in
contradistinction to the Mark Banco.

The Bank of Hamburg is the great Central depository for the
bankers and traders of that town. This Bank is bound (since 1846)
to purchase and sell Silver in Bars, from or to those firms who keep
an account there, at the rate of $27\frac{3}{4}$ Marks per Cologne Mark of
fine Silver (3608 English Troy grains). A banker or merchant may
bring Bar Silver to the Bank, where he gets credited for the same at
the rate of $27\frac{3}{4}$ Marks per Cologne Mark. He may transfer part or
the whole of the sum thus placed to his credit to another merchant
who keeps an account there, and he may also receive payments by
transfer in the same manner. Or, if he requires Silver for exporta-
tion, he may withdraw from the Bank part or the whole of the
Bullion standing to his credit, at the rate of one Cologne Mark fine
for every $27\frac{3}{4}$ Marks Banco.

The Bank charges 1 per mille commission on paying in.

It does not follow that every trader in Hamburg must be a
dealer in Bar Silver; there are only certain bankers or Bullion
merchants who supply or take the actual Silver Bars against
the Exchanges in Bills or other values; but the entire stock
is the property of the customers of the Bank, which passes from

hand to hand by transfer in the books, whilst the Bullion remains as security in the vaults.

This system, which resembles our so-called first-class Bank-note system (see chapter on Paper Currency), differing from it only in this most important particular that there is no actual issue of notes connected with it, is a most solid system, and Hamburg may well be proud of it. It has this drawback, however, that a rise in Silver in England, for exportation to India, will occasionally rapidly absorb the stock in Hamburg, causing thereby inconvenience and alarm. It may also become necessary, in course of time, in view of the general changes in the monetary systems of the world, tending to the establishment of the universal supremacy of Gold, to modify the system. The Hamburg Bank has already commenced making advances on Gold and Gold Coin.

The Courant, or current money of Hamburg, is founded upon the Mark Courant, of 16 Schillinge and 12 Pfennige each, of which 34 formerly made a Cologne Mark fine Silver; $27\frac{3}{4}$ Marks Banco equal to 34 Marks Current; but since 1856 the so-called Thaler Courant has been introduced, by which the Prussian Thaler is recognized as equal to $2\frac{1}{2}$ Marks Current, which gives 35 Marks Current to the Cologne Mark of fine Silver.

The Coinage is represented by

GOLD.

Ducats, about 5 Marks Banco, or $6\frac{1}{3}$ Marks Current. There are only very few of these in circulation.

SILVER.

2 Thaler, or 5 Mark Courant pieces.	
1 Thaler, or $2\frac{1}{2}$	" "
2 Mark Courant pieces.	
1	" " "
$\frac{1}{2}$	" " "
$\frac{1}{4}$	" " "
$\frac{1}{8}$	" " "
1 Schilling	" "
$\frac{1}{2}$	" " }
$\frac{1}{4}$	" " } also in Copper.

The Thaler pieces are of the same fineness and weight as the Prussian Coinage, and the sub-divisionary pieces are 625 to 250 fine.

There is no doubt that the old Coins, called Lübeck Courant, will soon be withdrawn altogether, and that the North German system will be substituted for the present system, which is somewhat vague and confused as to weight and fineness. Almost all other German Gold and Silver Coins, and many Foreign Coins, are current in Hamburg.

Paper Currency.—The Paper Currency (issued by the North German Bank is on a Par of value with the Coinage. Prussian Notes are also Current.

The price of Gold in Hamburg varies from 427 to $430\frac{1}{2}$ Marks Banco per Cologne Mark fine Gold, according to the state of the Market. Taking the proportion of value between Gold and Silver, at 1 Gold to $15\frac{1}{2}$ Silver, the price should be $430\frac{1}{2}$. On 6th September, 1867, the price was quoted at 427; 9th November 1867, 430; 25th January 1868, 428.

The Silver Valuation rules in Hamburg. The price of fine Silver being $27\frac{3}{4}$ Marks Banco per Cologne Mark fine Silver, the arbitrated rate of Exchange is

How much in Marks Banco = £1

If £3·89375 = 480 grains Standard.

If Standard 24 = 22 grains fine.

If Gold 1 = $15\frac{1}{2}$ Silver.

Grains 3608 = 27·75 Marks Banco.

= Marks 13·4714

This makes the value of the Mark Banco 1·4846 Shilling English, or 1s $5\frac{1}{2}$ d, the Mark Courant is therefore 1s $2\frac{1}{8}$ d, and the Par of Exchange between London and Hamburg,

£1 = Marks Banco 13·7½ Schillinge.

HANSE TOWNS.

BREMEN.

The Monetary Unit of the Free Town of Bremen is
 The Louis d'Or Thaler,
 divided into 72 Groten.
 of 5 Schwaren each.

The Bremen Louis d'Or Thaler is, like the Hamburg Mark Banco, simply a money of account; but, unlike the Mark Banco, it has no connection with a stock of Bullion in the vaults of the Bank, to which it serves as an imaginary integer; but it is entirely *ideal Money*.

The Louis d'Or Thaler, or Reichsthaler, is the fifth part of the so-called Louis d'Or (comprising Hanoverian, Brunswick, Hessen, Danish Gold Coins, called George d'Or, Wilhelm d'Or, &c., after the Sovereigns of these States. They differ in quality and weight, and are on the average about $\frac{1}{3}$ per cent. less in value than the Prussian Frederick d'Or; so that the fifth part of a Louis d'Or, the so-called Louis d'Or Thaler, is worth so much more in proportion than the Prussian Thaler. Calculated upon the average value of the Louis d'Or, the Bremen Gold Thaler is worth $1\frac{1}{6}$ Prussian Thaler, or 33 Silbergrroschen.

These Louis d'Or are worth, in Prussian Thalers, Thl. $5\frac{1}{2}$ to Thl. $5\frac{7}{8}$; 84 Louis d'Or of 5 Gold Thaler each are valued to make 1 Mint Pound fine Gold; this gives 420 Gold Thaler per Mint Pound, or $8\frac{1}{2}$ Thaler per German Crown (50 to the Mint Pound). At the price of Thl. $466\frac{2}{3}$ Prussian money, the Crown is worth $9\frac{1}{2}$ Thaler, and the Bremen Gold Thaler is accordingly worth $33\frac{1}{4}$ Silbergrroschen.

We have no doubt the North German Confederation will induce Bremen before long to abandon this *ideal Money* system for a more practical one.

It has this advantage for Bremen, that the town need not strike Gold or large Silver Coin, as the Coins of other nations are freely used, especially Louis d'Or, Crowns, and British Sovereigns.

The only Coins which the Bremen Mint strikes are

$\frac{1}{2}$	Gold Thaler	=	37 Groten .	986 $\frac{1}{2}$ fine.	} Silver.
$\frac{1}{4}$	"		12 "	739 $\frac{1}{8}$ "	
$\frac{1}{8}$	"		6 "	" "	
$\frac{1}{16}$	"		1 "	281 $\frac{1}{4}$ "	

and $\frac{1}{2}$ Groten, or 2 $\frac{1}{2}$ Schwaren pieces in Copper.

These Coins are simply used for small change, their nominal value is slightly higher than their actual metallic value.

Paper Currency. — The Bremen Bank issues a limited amount of Notes, on a Par of value with Metallic Coin.

The Par of Exchange between Bremen and London is difficult to determine, although the Gold valuation rules at both places. The reason is that the Gold valuation of Bremen rests on a loose basis (the varying value of old and odd Gold Coins). The value of the Hanoverian double Wilhelm d'Or of 1835, which weighs 13·310 grammes, 895·83 fine, is 16s 4 $\frac{1}{2}$ d sterling, which makes the Louis d'Or Thaler worth 3s 3 $\frac{1}{10}$ d. But we cannot take this for the basis of our calculation of the value of the Louis d'Or Thaler, as the various Louis d'Or, &c., pieces vary greatly in weight and fineness.

Since 1857 Bremen has determined to adopt the German Crown at the value of 8 $\frac{1}{2}$ Gold Thaler, and taking the average price of Gold Crowns in Berlin at 9 $\frac{1}{2}$ Thaler, we arrive at the rate of 100 Louis d'Or Thaler = 111·111 Prussian Thaler. The Louis d'Or Thaler is accordingly worth 39·159 pence, or 3s 3 $\frac{1}{2}$ d.

The Par of Exchange between London and Bremen, consequently is

$$£100 = 612\frac{1}{100} \text{ Louis d'Or Thaler.}$$

AUSTRIA.

The Monetary Unit of the Empire of Austria is
The Silver Florin,
divided into 100 Krentzer or Cents.

The Florin is coined at the rate of 45 per Mint Pound fine Silver as the

OESTREICHISCHE WÄHRUNG, OR AUSTRIAN
VALUATION.

The present Florin has been adopted since 1858, in order to bring the coinage of the Empire into a more accurate agreement with the other German coinages, as provided by the resolutions of the Vienna Monetary Convention of 1857, according to which 30 Prussian Thaler, 45 Austrian Florins, and 52½ South German Florins were to be severally coined from the Mint Pound fine Silver.

Before 1858 the Florin was coined at the rate of 20 per Cologne Mark fine Silver, and was divided into 60 Krentzer of 4 Pfennings each. The pieces so coined before 1858 were called *Conventions Münze*, or the 20 Guldenfuss (at the rate of 20 Gulden per Cologne Mark fine Silver). The *Conventions Münze* valuation is still retained in certain Austrian State Obligations, but the new Florin of 45 to the Mint Pound fine Silver is now the legal coin of the Empire. The change made a difference of about 5 per cent. between the value of the *Conventions Gulden* and the present Gulden, 100 pieces of the former being valued equal to 105 of the latter.

The present Coinage is represented by

13 $\frac{9}{16}$	Florins pieces, or Crowns . . .	} Gold.
6 $\frac{1}{2}$	„ „ Half Crowns . . .	
4 $\frac{9}{16}$	„ „ Ducats . . .	
4 or 2 Ducats Pieces have also been coined.		

3 Florins pieces (equal to 2 Thaler)	} Silver.
1½ Florin " (" 1 ")	
2 " "	
1 " "	
¼ " "	
1/10 " "	
1/20 " "	

and Copper coins of ½, 1, and 3 Kreutzer.

Austria having left the Germanic Confederation, has already declared that she ceases to be bound by the German Mint Convention of 1857. It remains to be seen whether she will continue to adhere to the present system.

The subjoined Table shows the weight and fineness of the pieces and their respective value:—

WEIGHT AND FINENESS.

GOLD.		Weight in Grammes.	Fineness.
Crown		1·111	100
Half Crown		5·556	900
Ducat		3·4904	980

SILVER.

3 Gulden piece		37·0370	900
1½ " "		18·5185	900
2 " "		24·6914	900
1 " "		12·3457	900
¼ " "		5·3419	520
1/10 " "		2·0000	500
1/20 " "		1·5000	375

VALUE.

GOLD.		Nominal Value.	Real Value.
Gold Crown, about	. Fl. 13·90	} Varying in the Market according to supply and demand. In Paper Currency their value is of course much higher, rising with the Premium on Gold.	
" Half Crown	. . 6·95		
" Ducat	. . . 4·60		

SILVER.		Nominal Value.	Real Value.
3 Gulden or Double Thaler piece	Fl. 3	. Fl. 3	
2 " "	" 2	. 2	
1½ " Thaler	" 1·50	. 1·50	
1 " "	" 1	. 1	
¼ " "	" 25 Kreutzer	. 25 Kreutzer.	
1/10 " "	" 10 "	. 8½ "	
1/20 " "	" 5 "	. 4½ "	

These figures show the Metallic value of the Coin ; computed in Paper Currency the value is of course so much higher, rising with the Premium on Silver as against Paper.

The Silver Valuation rules in Austria, and the Gold Coin must be considered simply as *Commercial Coin*, the same as in Germany and Holland.

The Remedy for the Coinage is 2 per mille for fineness, and $2\frac{1}{2}$ per mille for weight. The Mint Pound being worth 45 Florins, the Mint buys at from Fl. 44.90, and coins and re-coins Gold at the rate of 50 Crowns per Mint Pound fine, charging $\frac{2}{3}$ ths per cent. for Mintage.

Paper Currency.—The Mint in Austria is not a very busy Institution. The Metallic Coin has almost disappeared from circulation, and the State is deluged with Paper Money, as we have already had occasion to remark in the Chapter on Currency, at the beginning of the Book. The Premium on Metallic Money varies from $12\frac{1}{2}$ to 30 per cent., and Coin is an article in Austria in which people will speculate. As the Austrian Paper Currency is legal tender in the Empire, the respective value of the several descriptions of Metallic Coinage must be computed at a so much higher rate, according to this Premium on it. The National Bank of Austria issues Notes of ten, hundred, and thousand Florins ; but the State issues a much larger number of *unsecured* Notes, from 100 Florins downward, even to the most insignificant amounts.

At the rate of 45 Gulden per Mint Pound, the Austrian Metallic Par of Exchange is 50 per cent. above the Prussian Par, so that the new Austrian Silver Florin is worth $\frac{2}{3}$ Prussian Thaler, or 23.495 Pence (1s $11\frac{1}{2}$ d) ; and the Metallic or **Mint Par of Exchange between London and Vienna is**

$$£1 = \text{Fl. } 10.215, \text{ or Fl. } 10.21\frac{1}{2} \text{ Cents.}$$

But the Par upon the Paper Currency varies according to the Premium on Gold or Silver ; in February 1868 it stood at

$$£1 = \text{Florins } 11.80.$$

HOLLAND.

The Monetary Unit of Holland is
The Silver Florin,
divided into 100 Cents.

The Florin is also divided into 20 Stiver, which latter division is used in the quotation of the Exchange with London.

The Coinage of the present day is represented by

20	Florins	pieces	Double William	. .	} Gold.
10	"	"	William		
5	"	"	$\frac{1}{2}$ William		
11 $\frac{3}{8}$	"	"	Double Ducat		
5 $\frac{3}{8}$	"	"	Ducat		
2 $\frac{1}{2}$	"	"	Ryksdaalder		} Silver.
1	Florin	"	Florin		
$\frac{1}{2}$	"	"	Half Florin		
$\frac{1}{4}$	"	"			
$\frac{1}{16}$	"	"			
$\frac{1}{32}$	"	"			

and 1 Cent. and $\frac{1}{2}$ Cent. pieces in Copper.

The older Coinage of the Netherlands included Austrian-Dutch Sovereigns, Brabant Ducats, Ryders, Crown Dollars, Thaler, and other Coins.

The subjoined Tables show the weight and fineness of the pieces according to law, and their value :—

WEIGHT AND FINENESS.

GOLD.	Weight in Grammes.	Fineness.
Double Gold William . . .	13·458 . .	900
Gold William	6·729 . .	900
Half „	3·345 . .	900
Double Ducat	6·988 . .	983
Ducat	3·494 . .	983

SILVER.

Ryksdaalder	25·000	. . .	945
Florin	10·000	. . .	945
Half Florin	5·000	. . .	945
Quarter Florin	3·575	. . .	640
One-tenth Florin	1·400	. . .	640
One-twentieth Florin	0·685	. . .	640

The Silver Valuation rules in Holland, the Florin and Half Florin being full legal tender, whilst the Gold Coinage is considered *Commercial Coin*, varying in price in the market according to supply and demand.

GOLD.	Nominal value.	Real value.	} Varying in price in the Market.
Double William	Fl. 20	Fl. 19·867	
William	10	9·93 $\frac{1}{3}$	
Half William	5	4·96 $\frac{2}{3}$	
Double Ducat	11 $\frac{1}{2}$	11·26 $\frac{2}{3}$	
Ducat	5 $\frac{1}{2}$	5·63 $\frac{1}{3}$	

SILVER.	Nominal value.	Real value.
2 $\frac{1}{2}$ Florins pieces	Fl. 2·50	Fl. 2·50
1 Florin „	1·00	1·00
$\frac{1}{2}$ „ „	0·50 Cents	0·50 Cents
$\frac{1}{4}$ „ „	0·25 „	0·25 „
$\frac{1}{10}$ „ „	0·10 „	0·09 „
$\frac{1}{20}$ „ „	0·05 „	0·05 „

The Dutch use the French Kilogramme for their weight, and express the fineness of Bullion in Millièmes, upon the French system. The price of Bar Gold is quoted in the market at Fl. 1442·60 per Kilogramme 1000 fine, with a premium varying from about 12 $\frac{1}{2}$ to 13 $\frac{1}{2}$ per cent.; raising the price to between Fl. 1623 and Fl. 1637.

The legal weight of the Florin in Silver of 945 fine is exactly 10 grammes; the Florin accordingly contains 9·450 grammes fine Silver. This makes the Kilogramme of fine Silver worth Fl. 105·80; but the price in the market varies from Fl. 104 to Fl. 106. The

Mint buys Silver at its own discretion. The Remedies allowed for the Coinage are $2\frac{1}{2}$ per mille for weight and fineness.

Paper Currency.—The Dutch Paper Currency—in Notes of 5, 10, 20, 50, 100, 500, and 1000 Florins—is on a Par of value with the Coinage.

The Dutch Florin or Guilder containing 9·45 grammes fine Silver,

How many Pence = 9·45 grammes

If 31·1035 = 1 oz. Troy

Fine Silver $15\frac{1}{2}$ = 1 fine Gold

Fine Gold 22 = 24 Standard oz. British

Oz. British Standard 1 = 93·45 Pence (77s $10\frac{1}{2}$ d)

= 19·983 Pence

or 1s 8d

The Par of Exchange between London and Holland therefore is
£1 = 12·010 Florins.

or, with the fraction expressed in Stiver,

£1 = Florins 12·0 $\frac{1}{8}$ Stiver.

SWEDEN AND NORWAY.

STOCKHOLM.

The Monetary Unit of Sweden is
 The Riksdaler Riksmünt,
 divided into 100 Öre,

coined at the rate of 50 pieces from the Swedish Skäl-
 pund (= 6558·9 Grains Troy) 750 fine.

This Unit was introduced in 1856, and became compulsory in 1863. Up to that time the Riksdaler Banco was in use as Money

of Account, based on Paper Currency, and the Speciesdaler was the Chief Silver Coin; the relative proportions of value between the three descriptions of Money being 1 Speciesdaler = $2\frac{1}{2}$ Riksdaler Banco = 4 Riksdaler Riksmünt, the new Unit or Integer.

The Species and the Bancodaler were each divided into 48 Skilling, of 4 Stüver each, or 12 Runstyken.

The new Riksdaler Riksmünt is divided into 100 Öre, and the decimal system has also been adopted with regard to the weights of the precious metals.

The Coinage is now represented by

$8\frac{1}{2}$ Riksdaler pieces (Ducats) in Gold.

(There are also double and quadruple Ducats.)

4 Riksdaler pieces, called Speciesdaler	} Silver.
2 " " or half Speciesdaler	
1 " " Riksdaler Riksmünt	
$\frac{1}{2}$ " " $\frac{1}{2}$ "	
$\frac{1}{4}$ " " $\frac{1}{4}$ "	
$\frac{1}{10}$ " " $\frac{1}{10}$ "	

and Copper pieces of 5, 2, 1, and $\frac{1}{2}$ Öre, which are legal tender up to the amount of 1 Riksdaler.

The old Skilling pieces are still largely in circulation, and 25 Öre are reckoned equal to 12 Skilling, and so on in proportion.

The subjoined Table shows the weight and fineness of the pieces:—

	Weight in Grammes.	Fineness in Millièmes.
Gold, Ducat	3·486	976·61
Silver, Speciesdaler	34·007	750
" $\frac{1}{2}$ "	17·003	750
" Riksdaler	8·502	750
" $\frac{1}{2}$ " 50 Öre	4·251	750
" $\frac{1}{4}$ " 25 "	2·125	750
" $\frac{1}{10}$ " 10 "	0·850	750

The nominal value of the Silver Coinage is strictly in accordance with the Metallic Value, even down to the $\frac{1}{10}$ Riksdaler.

The Remedy allowed is three per mille for both Gold and Silver; for the smaller denomination the Remedy for weight is larger.

The Paper Currency issued by the Bank of Stockholm,

in Notes of 1, 3, 10, 15, 25, 50, and 750 Riksdaler, is on a Par of value with the Coinage.

The Silver Valuation rules in Sweden, the price of Gold Coin varying with the supply and demand. The Mint buys Silver at its own discretion at 50 Riksdaler Riksmünt per Skälpund, charging $\frac{3}{4}$ per cent. for Mintage.

Taking the weight of the present Riksmünt Riksdaler as legally established at 8.502 grammes, 750 fine, its value is (calculated by the usual rule) 13.483 Pence (1s $1\frac{1}{2}$ d), and the **Metallic Par of Exchange between London and Stockholm is accordingly,**
£1 = 17.80 Riksdaler Riksmünt.

CHRISTIANIA.

The Monetary Unit of Norway is
 The Riksdaler Species,
 divided into 5 Orts or 120 Skilling.

This Unit is held equivalent to the Swedish Speciesdaler, though it is Coined of Silver 9 per mille less fine than the Swedish Coin; however, as a general rule 4 Riksdaler Riksmünt Swedish may be reckoned 1 Riksdaler Species Norwegian.

The Coinage is represented by
 (No Gold Coins are struck.)

1 Speciesdaler	} Silver.
$\frac{1}{2}$ "	
$\frac{1}{5}$ "	
$\frac{1}{10}$ "	
$\frac{1}{15}$ "	
$\frac{1}{30}$ "	
$\frac{1}{60}$ "	

and Copper Coins of 2, 1, and $\frac{1}{2}$ Skilling.

The subjoined Table shows the weight and fineness of these pieces :—

	Weight in Grammes.	Fineness in Millièmes.
Speciesdaler	28·893	875
$\frac{1}{2}$ „	14·447	875
$\frac{1}{8}$ „	5·779	875
$\frac{1}{10}$ „	2·889	875
$\frac{1}{15}$ „	1·926	875

The Metallic value of the Silver Coinage is the same as the Nominal value. There are old 24, 8, 4, and 2 Skilling pieces respectively 687 $\frac{1}{2}$, 500, and 250 fine, which are not of the proper Metallic value.

The Coinage Remedy allowed is the same as in Sweden.

The **Paper Currency** issued by the Bank at Drontheim in Notes of $\frac{1}{8}$, $\frac{1}{2}$, 1, 5, 10, 50, and 100 Speciesdaler, is on a Par of value with the Coinage.

The weight of the Speciesdaler being legally 28·893 grammes 875 fine, its value in British Money is 53·46 Pence (4s 5 $\frac{1}{2}$ d), and the Par of Exchange between London and Christiania is
£1 = 4·489 Speciesdaler, or Speciesdaler 4·58 $\frac{1}{2}$ Skilling.

DENMARK.

The Monetary Unit of Denmark is
 The Rigsdaler,
 divided into 96 Skilling,
 or 6 Marks subdivided into 16 Skilling of 5 Penning each.

This Unit is the exact half of the Norwegian Speciesdaler, and 2 Danish Rigsdaler are equal to 1 Danish or 1 Norwegian Speciesdaler.

(As the reader is likely to get confused with this variety of Riksdaler, we repeat that 4 Riksdaler Riksmünt Swedish or 2 Riksdaler Danish are equal to 1 Swedish, Norwegian or Danish Speciesdaler).

The Coinage is represented by

14 $\frac{2}{3}$	Rigsdaler pieces,	Double Frederick d'Or	} Gold.
7 $\frac{1}{3}$	"	Frederick d'Or	
2	"	Speciesdaler	} Silver.
1	"	Daler	
$\frac{1}{2}$	"	"	
$\frac{1}{3}$	"	"	
$\frac{1}{6}$	"	"	
$\frac{1}{12}$	"	"	
$\frac{1}{24}$	"	"	

and Copper Coins of 2, 1, $\frac{1}{2}$, and $\frac{1}{4}$ Skilling.

Gold Ducats were also formerly coined.

The subjoined Table shows the legal weight and fineness of the pieces :—

GOLD.		Weight in Grammes	Fineness in Millièmes.
Double Frederick d'Or	.	13·284	895·833
Frederick d'Or	.	6·642	895·833
SILVER.			
Speciesdaler	.	28·893	875
Rigsdaler	.	14·447	875
$\frac{1}{2}$ "	.	7·223	875
$\frac{1}{3}$ "	.	6·129	687·5
$\frac{1}{6}$ "	.	4·214	500
$\frac{1}{12}$ "	.	2·809	375
$\frac{1}{24}$ "	4 Skilling	1·856	250
$\frac{1}{48}$ "	3 "	1·591	218·75

so that, with the exception of the 4 and 3 Skilling pieces, which are below the mark, the Metallic value of the Silver Coinage is the same as the Nominal value.

The Silver Valuation rules, and the Gold Coins are *Commercial Coin*, varying in price with the supply and demand.

The Mint Remedies are the same as in Sweden.

Paper Currency.—The Notes of the National Bank, of 5, 50, and 100 Rigsdalers, are on a Par of value with the Coinage.

The Rigsdaler in Silver weighing 14·447 grammes of 875 fine, its value in British Money is 26·730 Pence (2s 2 $\frac{3}{4}$ d), and the **Par of Exchange between London and Copenhagen is**

£1 = 8·978 Rigsdaler, or Rigsdaler 8·94 Skilling.

RUSSIA.

The Monetary Unit of the Empire of Russia is
The Silver Rouble,
divided into 100 Copeks.

The former Banco Rouble, an ideal money, resting on a Copper basis, and worth about $\frac{2}{3}$ Silver Rouble is now no longer in use.

The Russian Coinage is represented by

10 $\frac{3}{10}$	Rouble pieces	Imperials	} Gold.
5 $\frac{3}{10}$	"	Half Imperials	
1	Rouble piece		} Silver.
$\frac{1}{2}$	"	"	
$\frac{1}{4}$	"	"	
$\frac{1}{5}$	"	"	
$\frac{1}{10}$	"	"	
$\frac{1}{20}$	"	"	

And Copper pieces of 5, 3, 2, $\frac{1}{2}$, and $\frac{1}{4}$ Copeks.

Silver Coins for Poland of

1 $\frac{1}{2}$ Rouble, or 10 Polish Florins.

$\frac{3}{4}$ " or 5 " "

15 Copek pieces, or 1 Polish Florin (Zloty),

with $\frac{1}{3}$ Zloty and $\frac{1}{6}$ Zloty pieces.

The Russian Government used to coin Ducats (of the same weight and quality as the Dutch); Platina Coins of 12, 6, and 3 Roubles were also coined; but since 1845 they have been withdrawn from circulation, the experiment having entirely failed.

The Russian Half Imperials are 22 carats fine, the same as British Standard. The Mint has a Remedy of 2 per mille for weight, but none for fineness. It is of course almost impossible to make the Alloy exactly Standard, nevertheless the Russian Gold Coins are the most regular of all Coins with regard to quality, which shows what proper care can accomplish. They are a favorite Coin in the British Mint for Re-coining into Sovereigns. The

weight of the Half Imperial is legally 6·544; at 77s 10½d per oz. it is worth 16·384 Shillings. The Half Imperial was originally issued as 5 Roubles, but it is actually worth $5\frac{3}{5}$ Silver Roubles.

The subjoined Table shows the weight and fineness of the Silver Coinages:—

	Weight in Grammes.	Fineness in Millièmes.
Rouble	20·7315	868·056
$\frac{1}{2}$ "	10·3660	868·056
$\frac{1}{4}$ "	5·1830	868·056
$\frac{1}{5}$ "	4·1460	868·056
$\frac{1}{10}$ "	2·0730	868·056
$\frac{1}{20}$ "	1·0370	868·056

The actual Metallic value of these pieces, down to the smallest of them is exactly the same as their Nominal value. In this respect Russia presents a very favourable exception from almost all other countries. Some of the older small Silver Coins are, however, only 750 fine.

Paper Currency.—Russia has an excessive Paper Currency, the Empire being deluged with Bank Notes. Gold and Silver are at a Premium varying from 12½ to 25 per cent. The exportation of Silver has for a long time been prohibited; that of Gold is periodically allowed, but just now it is also prohibited.

The Metallic Money, expressed in this forced legal Paper Currency, is of proportionately higher value, rising with this Premium. According to the Russian Mint Law, 100 Russian Silver Roubles weigh $5\frac{1}{4}$ Russian Pounds. (The Russian Pound is 6319·733 Troy Grains.) One hundred Silver Roubles, less Mintage Charges, will accordingly be about the price paid by the Russian Mint for that weight of Silver.

The value of the Silver Rouble (computed by Chain Rule) is 38·02 Pence, but the Half Imperial, which is worth in Gold 16·384 Shillings, taken at $5\frac{3}{5}$ Roubles, gives an **Exchange between St. Petersburg and London of**

1 Rouble = 38·175 Pence or 3s 2½d.

and at 77s 7½d per ounce, the Bank price here, it is 38·055.

But, as a Paper Currency now reigns in Russia, and the Premium on Coin in Exchange on London is large, the Paper Par must be regulated accordingly. The Exchange lately stood at 32 Pence per Rouble.

GREECE.

The Monetary Unit of Greece is
the Drachme,
divided into 100 Lepta.

(Formerly there was the Phoenix of 100 Lepta = 93 Lepta of the present valuation.)

The Coinage is represented, since 1833, by

40 Drachmes pieces	}	Gold.
20 " "		
5 " "	}	Silver.
1 Drachme "		
$\frac{1}{2}$ " "		
$\frac{1}{4}$ " "		

and Copper Pieces of 10, 5 and 2 Lepta, and 1 Lepton.

The subjoined Table shows the legal weight and fineness of these pieces :—

GOLD.		Weight in Grammes.	Fineness in Milliemmes.
40 Drachmes pieces		11·553	900
20 " "		5·776	900
SILVER.			
5 " "		22·385	900
1 Drachme "		4·477	900
$\frac{1}{2}$ " "		2·2385	900
$\frac{1}{4}$ " "		1·1119	900

The intrinsic Metallic value of the pieces being thus on a Par with their Nominal value. The proportionate value between Gold and Silver is as 1 to 15 $\frac{1}{2}$, the same as in France, the French system of weights, &c., having been adopted.

Paper Currency.—The National Bank issues Notes of 25, 50, 100, and 500 Drachmes, which form the principal circulating medium.

The value of the Drachme in Sterling Money is 8·520 Pence.

The Par of Exchange between London and Athens is accordingly

£1 = 28·170 Drachmes.

SPAIN.

The Monetary Unit of Spain is
The Real de Vellon,
divided into 10 Decimes, or 100 Centimes.
20 Reales = 1 Dollar or Duro.

In former times nearly every Spanish Province had a different system of Coinage, all more or less connected with the Dollar; there was the Castilian, the Aragonian, the Valentian, the Catalanian valuation; that of Navarra, Mallorca, the Canary Islands, &c., and under these different systems the Real had different values and denominations. Since 1848 the new system has been substituted all over the country, and the present Real is called Real de Vellon.

The Spanish Coinage is represented by

320 Reals, or 16 Dollars pieces, Onza	}	Gold.
de Or, or Quadruple, or Doubloon		
160 Reals, or 8 Dollars pieces, $\frac{1}{2}$ Onza		
de Or, or $\frac{1}{2}$ Quadruple, or $\frac{1}{2}$ Doubloon		
100 Reals Isabella Doubloon		
80 „ $\frac{1}{4}$ Onza		
40 „ $\frac{1}{8}$ „	}	
20 „ $\frac{1}{16}$ „		

20	Reals, Piastre or Duro	.	.	.	} Silver.
10	„ Escudo	.	.	.	
4	„ Peseta	.	.	.	
2	„ $\frac{1}{2}$ „	.	.	.	
1	„ Real de Vellon	.	.	.	

And Copper pieces of 25, 10, and 5 Centimes, or $2\frac{1}{2}$, 1, and $\frac{1}{2}$ Decimes.

(The Escudo, divided into 10 Reals or 100 Decimes, is practically the most useful Unit.)

The Quadruple, or Onza de Oro, with its divisions into $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{16}$ th pieces is now no longer coined. The days of the old Spanish Doubloons are gone by; but these Coins are dealt in in London, Paris, and elsewhere, for trading with Spanish and other settlements. In London they fetch 75s to 76s per oz. The old Doubloons ranged in fineness from 850 to 917 fine; those struck until 1848 weighed 27·064 grammes, and were 875 fine. Their real quality generally turns out a little below the legal fineness.

The modern Doubloon of Isabella, equal to 100 Reals or 5 Dollars, now replaces the former Doubloon of 16 Dollars.

The old Silver Coins, differing more or less in value, are almost entirely withdrawn from circulation.

The subjoined Table shows the weight and fineness of the Spanish Coins in actual circulation :—

GOLD.				
		Weight in Grammes.	Fineness in Millimes.	
Isabella Doubloon.		8·3865	900	
SILVER.				
Duro	.	25·960	900	
Escudo	.	12·980	900	
Peseta	.	5·192	900	
$\frac{1}{2}$ „	.	2·596	900	
Real	.	1·298	900	

The intrinsic Metallic value of the pieces is on a Par with their Nominal value. The proportion of value between Gold and Silver is as 1 to 15·477, so that practically the Double Standard prevails.

The Mint Remedies are 2 per mille for Gold and 3 per mille for large Silver pieces, both for weight and fineness.

Paper Currency.—Spain is an over-issuing State, and Paper reigns paramount all over the land, subject to a variable discount. A large number of Banks, under supervision by Government Inspectors, issue Notes based upon State and other securities. It is impossible to determine the actual value of Coin as against Paper. Each Bank has a district, in which its Notes are current; when out of this district, they cease to be current, or are taken only at a discount. Thus, Notes of the South will not pass in the Centre, West, East, or North of the country, and *vice versa*.

A revolution breaking out, or threatening to break out, in a part of Spain, the Notes current in that part fall at once in value, the depreciation keeping pace with the prospects of the success of the movement. Adding to this the discredit which the treatment of the Spanish Bondholders abroad has brought upon the country, the international value which this Paper Currency is likely to command may readily be imagined. However, this does not much affect Foreign Exchanges; for in Bills drawn in England on Spain, good care is always taken to stipulate expressly on the Bill that the amount stated *is to be paid in Gold or Silver Coin*—Reals de Vellon, or Duros fortes—Hard Cash.

The Par calculated from Silver will give about the same as that from Gold.

The five Dollar Doubloon of Isabella weighing 8·3865 grammes 900 fine, its value in English Gold Coin is

247·389 Pence, or £1 0s 7½d,

which makes the Real worth about 2·474 Pence; and the Metallic **Par of Exchange between London and Madrid is accordingly**

49·478 Pence = 1 Spanish Dollar,

Or about 49½ Pence.



PORTUGAL.

The Monetary Unit of Portugal is
The Milreïs of 1000 Reïs.

This division of a Coin of about 50 British Pence in value is an abnormal one ; the Reï, representing about $\frac{1}{4}$ th Farthing in value, is a mere nominal insignificant fraction, which is very embarrassing in accounts, requiring the use of a long string of figures.

The Portuguese Coinage is represented by

10 Milreïs pieces	Corõa (Crown)	
5 " "	$\frac{1}{2}$ " "	} Gold.
2 " "	$\frac{1}{3}$ " "	
1 " "	$\frac{1}{6}$ " "	
$\frac{1}{2}$ " "	5 Tostões, 500 Reïs	} Silver.
$\frac{1}{3}$ " "	2 " 200 "	
$\frac{1}{6}$ " "	1 " 100 "	
$\frac{1}{12}$ " "	50 "	

and Copper pieces of 20, 10, and 5 Reïs.

Since 1855 Portugal has adopted the Gold Valuation, and, following the example of Great Britain, has debased her Silver Coinage, limiting consequently its capacity as legal tender to 5 Milreïs. One Milreïs pieces in Silver are no longer Coined.

The subjoined Table shows the weight and fineness of the pieces :—

GOLD.		
	Weight in Grammes.	Fineness in Millièmes.
Crown	17.735	916.667
$\frac{1}{2}$ "	8.867	916.667
$\frac{1}{3}$ "	3.547	916.667
$\frac{1}{6}$ "	1.773	916.667

SILVER.		
	Weight in Grammes.	Fineness, in Millièmes.
500 Milreïs	12·500	916·667
200 „	5·000	916·667
100 „	2·500	916·667
50 „	1·250	916·667

which gives the following Table of values,

	Nominal Value.		Real Value.
Gold 10 Milreïs	10 Milreïs	10 Milreïs	10 Milreïs
„ 5 „	5 „	5 „	5 „
„ 2 „	2 „	2 „	2 „
„ 1 „	1 „	1 „	1 „
Silver 500 Reïs	500 Reïs		454 Reïs
„ 200 „	200 „		181 „
„ 100 „	100 „		90 „
„ 50 „	50 „		45 „

The Mint has not Coined much Gold Money as yet. British Sovereigns, being of the same fineness as the Portuguese Gold Coin, are largely used; their current value is 4500 Reïs.

The Paper Currency was formerly much depreciated, but is now generally on a Par of Value with the Metallic Coinage.

The Crown of 10 Milreïs weighing 17·735 grammes of British Standard fineness, its value in British Money is 532·84 Pence or £2 4s 4 $\frac{1}{4}$ d; and the **Mint Par of Exchange between London and Lisbon accordingly**

53·284 Pence = 1 Milreis Gold,

whilst calculated upon the British Sovereign at 4500 Milreïs it is

53·333, or exactly 53 $\frac{1}{3}$ Pence per Milreis.

TURKISH EMPIRE.

The Monetary Unit of Turkey is
The Piastre,
divided into 100 Aspres for Money of Account,
and into 40 Paras, of 3 Aspres each, for Currency
purposes.

The history of the Turkish Piastre is a curious one. Originally the Turkish Coin of this denomination was of about the same value as the Spanish Piastre; in 1750 it stood at about 36 Pence, whilst at present it is worth only $2\frac{1}{4}$ Pence. This decline in the value of the piece arose simply from the progressive debasement of its fineness and weight by successive Governments, until at last the intrinsic value of the Coin in fine Silver was reduced to $\frac{1}{3}$ th part of the original value. The despotic Governments of the State had not much trouble in forcing the continued circulation of the debased Coin upon their subjects, and they were blind to the disastrous effects of such arbitrary measures upon the Home and Foreign Trade of the Empire. But this was not all: an enormous amount of Paper Currency, under the denomination of *Caimé*, was forced into circulation besides; and what with the depreciated value of this Paper Currency, the fearfully debased, and even counterfeit Coinage, circulating in an immense variety of larger and smaller pieces, to the total amount of some 900 millions Piastres, and what with the incessant and violent fluctuations in the price of Foreign Coin, there surely never was a greater state of confusion in a Monetary System. The stoic submission of the Moslem to Kismet, and his belief in the infallibility of the Prophet's Successor, alone preserved the State from the dreadful revolution which, with a much smaller share of grievances, would inevitably have burst out in a civilised Christian community.

The influence of international intercourse, however, compelled the Government of Turkey to devise some reform, and in 1844, under the Sultan Abdul Medjid, an attempt was made to re-establish the

Monetary System of the Empire upon a more solid basis, by the issue of a new Coinage, taking for its Unit or Integer the latest edition of the debased Piastre. At a subsequent period the Imperial Ottoman Bank was established, whose functions comprised also the gradual reorganisation of the Turkish Mediums of Exchange. This Institution has succeeded so far in regulating and funding the wretched Paper Currency known hitherto as *Cuimé* (now a Turkish 5 per cent. Stock). The Coinage is also being regulated, and a contract for a new Copper Coinage is now being executed for the Turkish Government at Birmingham. But the task of entirely withdrawing from circulation the miserable old Coinage, and substituting for it a healthier and more stable system of Currency, is a most difficult one, which it will take years to accomplish. The new Coinage of 1844, for instance, was no sooner in circulation than it began to be exported abroad, and, in spite of an absurd law, passed some years ago, forbidding its rise in value (since repealed), it has so far served scarcely any other purpose than that of satisfying the demands of foreign creditors. The country is therefore still suffering from the plague of a debased Coinage, and from the variable rates of many sorts of good foreign Coin (English Sovereigns among the number), to which the merchants are compelled to have recourse.

The Metallic Monies of Turkey are accordingly represented by the general medley of these old and debased Coins (the so-called *Beshlik*, with its divisions), a description of which would take too much space, besides being of but little use here; and by the Medjidié Coinage (issued by Abdul Medjid in 1844), which, although it has so far been of less importance in the Turkish home trade, will yet, under the influence of the monetary reforms, gradually work its way, and which serves, at all events, as a practical basis for the foreign Exchanges with Turkey.

The Medjidié Coinage of Turkey is represented by			
100	Piastres pieces	Medjidié, or Turkish Pound or Lira	} Gold.
50	"	"	
20	"	Silver Medjidié	} Silver Coin, bearing each of them several Turkish names.
10	"	$\frac{1}{2}$ "	
5	"	$\frac{1}{4}$ "	
2	"	2 Piastres . . .	
1	"	1 Piastre . . .	

and Copper Pieces of 5 Paras and 1 Para.

The subjoined Table shows the legal weight and fineness of these pieces :—

GOLD.	Weight in Grammes.	Fineness in Millièmes.
Gold Medjidié	7·216	916
Half Gold Medjidié	3·608	916

The older Turkish Gold Coins ranged from 106 to 875 fine. The Zecchino, or Sequin, of the 18th Century being 106, 145, 305, 425, and 625 fine, with other variations; the 40 Piastres piece of 1830, weighing 3·598 grammes, being 795 fine; the 5 Piastres piece of 1835, weighing 410 grammes 835 fine, &c. &c.

SILVER.		
Silver Medjidiè	24·055	830
10 Piastres pieces	12·027	830
5 " "	6·013	830
2 " "	2·405	830
1 " "	1·202	830

The Metallic value being accordingly on a Par with the Nominal.

(The old 5 Piastres piece, the Beshlik, weighed 16·200 grammes 215 fine, the smaller pieces were 165 fine. The quality of other Piastres ranged from 220 to 480 fine).

The Gold Coinage seems intended to serve as the Standard of value in future. The proportions of fine metal between the Gold and Silver Coinage stands at 1 to 15 $\frac{1}{10}$.

The Remedy for the Gold Coinage is 2 per mille, and for the Silver Coinage 3 per mille, for weight and fineness.

Paper Currency.—The *Caimè* have been withdrawn, and converted into an Interest-bearing State Debt. The Imperial Ottoman Bank now issues Notes. This Bank may succeed in improving the financial and commercial condition of Turkey, provided the orthodox Moslem do not rebel against the Christian system of State Loans and Monetary matters generally.

For the Exchange with England the Medjidié or Turkish Lira in Gold serves for basis of calculation. Taking its weight, as fixed

by law, at 7·216 grammes 916 fine, it is worth, at the British Mint price of 77s 10½d per oz. Standard, 216·645 Pence, or 18s 0⅔d; and the Par of Exchange between London and Constantinople is accordingly

£1 = 110·780 Piastres Turkish.

The actual Exchange, however, varies according to the Premium on Gold as against Paper Currency.

EGYPT.

The Turkish Piastre is also the Unit for the Viceroyalty of Egypt; but upon the Tariff fixed by the Egyptian Government for Foreign Gold Coin, 11 Turkish Piastres are held equal to 10 Piastres in Egypt. The British Sovereign, which is the favorite Coin in Egypt, is reckoned at about 100 Piastres (Tariff 97·20).

The Par of Exchange between London and Alexandria is
£1 = 100·71 Piastres.

UNITED STATES OF AMERICA.

The Monetary Unit of the United States is
the Dollar,
divided into 100 Cents.

The Coinage is represented by

20 Dollars pieces	Double Eagle	.	} Gold.
10 "	Eagle	.	
5 "	Half Eagle	.	
3 "		.	
2½ "	Quarter Eagle	.	
1 Dollar piece		.	

1 Dollar piece	.	.	.	.	} Silver
$\frac{1}{2}$ "	.	.	.	.	
$\frac{1}{4}$ "	.	.	.	.	
$\frac{1}{10}$ " Dime	.	.	.	.	
$\frac{1}{8}$ " Half Dime	.	.	.	.	
3 Cents pieces	.	.	.	.	

and in Copper 1 and $\frac{1}{2}$ Cent pieces, in Nickel 1 Cent pieces.

The Silver Dollar was the original full legal tender in the United States up to 1853, the Gold Coinage being also full legal tender; so that in fact the Double Standard prevailed; the Silver Dollar weighing 26·7295 grammes, and the Ten Dollars Gold piece weighing 16·718 grammes both 900 fine, the proportion of value between Gold and Silver was as 1 to 16. As the proportion stood in other countries at say 1 to 15 $\frac{1}{2}$, Silver in the United States was cheaper, and the consequence was that it was largely exported.

In 1853, therefore, a Law was passed, reducing the weight of the Half Dollar and its sub-divisions to the extent required to alter the proportionate value of Gold and Silver from 1 to 16 to about 1 to 14 $\frac{7}{8}$, debasing thus the Half Dollar below the general rate of 1 to 15 $\frac{1}{2}$, the same as is done in England and Portugal. But this law does not include the Silver whole Dollar piece, of which the weight remains unaltered. The Mint, however, has gradually ceased coining Dollar pieces, and now issues very few of them. Theoretically, therefore, the Double Standard still prevails, until Congress shall pass an Act reducing the Dollar to the same level as the Half Dollar; but practically the Gold valuation rules.

The subjoined Table shows the weight and fineness of these pieces:—

GOLD.	Weight in Grammes.	Fineness in Millèmes.
Double Eagle	33·436	900
Eagle	16·718	900
$\frac{1}{2}$ Eagle	8·359	900
3 Dollars pieces	5·0154	900
$\frac{1}{4}$ Eagle	4·1795	900
1 Dollar piece	1·6718	900

SILVER.	Weight in Grammes.	Fineness in Millièmes.
1 Dollar piece	26.7295	900
$\frac{1}{2}$ " "	12.441	900
$\frac{1}{4}$ " "	6.221	900
$\frac{1}{10}$ " "	2.488	900
$\frac{1}{20}$ " "	1.244	900
3 Cents "	0.802	750

their respective value being :—

GOLD.	Nominal Value.	Actual Metallic Value.
Double Eagle	20 Dollars	20 Dollars
Eagle	10 "	10 "
$\frac{1}{2}$ Eagle	5 "	5 "
3 Dollar piece	3 "	3 "
$\frac{1}{4}$ Eagle	2.50 "	2.50 "
$\frac{1}{10}$ Eagle	1.00 "	1 "

The 3 Dollars piece is no longer coined.

SILVER.	1 Dollar	1 Dollar $2\frac{3}{4}$ Cents.
Dollar	50 Cents	48 Cents
$\frac{1}{2}$ "	25 "	24 "
$\frac{1}{4}$ "	10 "	$9\frac{1}{2}$ "
$\frac{1}{10}$ "	5 "	$4\frac{3}{4}$ "
3 Cents pieces	3 "	$3\frac{3}{8}$ "

(It is unnecessary here to give an account of the early Californian Coinage, especially the Octagon 50 Dollar pieces, which were issued by private parties. Since the establishment of a regular United States Mint in San Francisco they have been withdrawn from circulation.)

The Remedy for the Gold Coinage is 2 per mille, for the Silver Coinage 3 per mille for fineness; for weight 1 to 3 per mille is allowed in the Gold Coinage, according to the size of the piece; and 5 per mille in the Silver Coinage, with a still larger allowance for the smaller Silver Coin.

The weight used for Bullion in the United States is the English Troy ounce, divided into 100 parts; but the fineness is reported in Millièmes, to $\frac{1}{2}$ Millième exact.

The Eagle weighs by law 258 grains 900 fine, which makes the price of the ounce fine 20·67183 Dollars. One-half per cent. is charged for Mintage.

The United States Mints and the State Assay Office in New York furnish also Gold Bars 900 fine, at a charge of $\frac{1}{2}$ per cent.; and Bars of fine Gold, at a charge of only 6 Cents per 100 Dolls. or $\frac{3}{4}$ per mille, if the Bar exceeds 10 oz. in weight. The Bars so issued have their value stamped on them, and afford a very convenient means of remittance.

For fine Silver Bars, melted, assayed, and stamped at the Mint, $\frac{1}{2}$ per cent. is charged. The price of 1000 fine Silver may be taken at Dolls. 1·293 per oz.

The Mint also *parts Bullion* for the public, at a charge of about 3 per mille for Gold, and about 1 per cent. for Silver, as by the following rule.

CHARGES FOR PARTING GOLD AND SILVER.

Proportion of Gold.

1 to 200 thousands	1 $\frac{1}{2}$	Cents per oz. gross after melting.
200 to 600	2	„ „ „ „
601 to 700	3	„ „ „ „
701 to 800	4	„ „ „ „
801 to 946	5	„ „ „ „

The Mints in the United States have the reputation of being the best constructed and best appointed Establishments of the kind, as regards building, machinery, and management. The Managers of European Mints do not consider the United States Coinage to be as perfect as it is represented to be, still there can be no doubt but that the United States Gold Coin is, as a rule, superior to all others, except that of Russia.

Paper Currency—The Greenback Currency of the United States is much depreciated*

The subjoined Table shows the rise and fall of the Gold Dollar as against the United States Paper Currency, from 1860 to 1868. It shows how it stood at Par before the outbreak of the Civil War; how it began to rise in price after, until 1865, when it attained the

* See pp. 49 and 56.

maximum; and how it has declined again since then to its present value, which, however, still stands at $33\frac{1}{2}$ per Cent. Premium.

Date.	Gold.	Value in Paper.
January 1, 1860	. Dols. 1	Dols. 1·00
„ 1861	. 1	1·00
„ 1862	. 1	1·00
„ 1863	. 1	1·33 $\frac{1}{2}$
„ 1864	. 1	1·52
„ 1865	. 1	2·37
„ 1866	. 1	1·44 $\frac{1}{2}$
„ 1867	. 1	1·33
„ 1868	. 1	1·33 $\frac{1}{2}$

The following Statement of the expenses of the manufacture of Paper Money may also prove interesting :—

The Expense of Furnishing Currency to National Banks.—

It appears from official data that the expense of Printing and Furnishing Currency for circulation to National Banks, the amount paid for engraving plates and special dies, and for printing circulating notes for National Banks, from the organisation of the Bureau to 18th Jan., amount to 1,679,356 Dollars, and paid for paper during the same period 63,980 Dollars, making a total of 1,743,336 Dollars. These items do not cover the entire expense, such as transportation, clerical labour, sealing, numbering, &c.—*New York Herald*, 29th January 1868.

The Eagle or 10 Dollars piece, weighing by law 258 grains 900 fine, is worth, at 77s 10 $\frac{1}{2}$ d per oz. British Standard,

How many pence are = 258 grains 900 fine

If 900 fine 1000 = 900 fine metal

If 22 carats fine = 24 Standard

Standard grains 480 = 9345 Pence

= 493·1613636

or £2 1s 1 $\frac{1}{2}$ d.

The £ Sterling is worth Dols. 4·8665, but it is taken at Dols. 4·84, according to Tariff.

The Mint Par of Exchange is therefore in London—

1 Dollar = 49·316 Pence.

But, except in San Francisco, it is not upon this basis that the Exchange on London is reckoned in the United States.

According to an old United States Coinage the Dollar was formerly valued at 54 Pence, so that 40 Dollars were worth £9, and

100 Dollars = £22·500

but in the present Coinage 100

Dollars are worth only £20·5483

which makes a difference of 9·4981 or $9\frac{1}{2}$ per cent.; so, instead of adopting the new form of Exchange, the old valuation of Dols. 100 = £22 10s has been retained, and the difference is quoted by way of *Premium* on the 100. The Exchange between New York and London is thus quoted at New York either at a Premium varying from $8\frac{1}{2}$ to $10\frac{1}{2}$ per cent., or it is quoted simply—London at $108\frac{1}{2}$ or $110\frac{1}{2}$. The actual **Mint Par** being, according to this system,

Exchange on London 109½ Dollars Gold (for £22 10s).

Where the Exchange is expressed in Paper Currency, the Premium on Gold is added.

BRITISH NORTH AMERICA.

The Monetary Unit for Canada and the other British Provinces in North America is

The Dollar,

divided into 100 Cents ;

besides which

The £ Halifax Currency

and

The £ Sterling British Currency

are in use.

Neither of these valuations is represented by a Canadian Coinage; for, with the exception of

$\frac{1}{2}$ Dol., or 20 cents pieces, weighing 76·85 gr. 900 fine.

$\frac{1}{10}$ " " 10 " " } in proportion.

$\frac{1}{20}$ " " 5 " " }

coined in England to a limited amount, Canada has no Coinage of her own; in fact she has no Mint establishment. The Metallic Circulating Mediums of the Colony consist of all sorts of Foreign Coins, principally of the Dollar class.

The *Dollar Unit* of Canada is only represented by the Paper Currency issued by the Banks; it is worth 50 Pence British.

The *Halifax Currency Pound*, divided into 20 Shillings of 12 Pence each, is simply money of account. It is founded upon the valuation of the above Dollar, at the rate of four to the Halifax Pound, making the Dollar worth 5 Shillings, or 60 Pence, as *Halifax Currency*; whereas, calculated in British Sterling, at 50 Pence per Dollar, it takes 4·80 Dollars to make £1 English; which makes a difference of 20 per cent.

The actual *British Sterling Money* is used only by the Government and the Custom House.

For the Exchange Valuation another sort of ideal money is introduced, viz.: the *Halifax Sterling*, at 4s 6d per Dollar. The Halifax Currency being 5s per Dollar, or 60 Pence, whilst the Sterling Dollar is 4s 6d only, or 54 Pence, it follows that £100 in Halifax Currency are equal to £90 in Halifax Sterling; which makes a difference of 10 per cent. This Halifax Sterling is used in the same way for computing the Exchange with Great Britain, as the old New York Sterling valuation, which takes £9 to equal 40 Dols., or 4s 6d per Dollar, and quotes the difference between this and British Sterling by way of a Premium. The value of the Canadian Dollar being 4s 2d British, as fixed by law, this Premium (4d upon 50d) amounts to 8 per cent., and in the fluctuations of this Premium the state of the Exchange is expressed. If, therefore, the value of the Dollar is to be considered in actual Sterling, we have to arrive at the result through four different elements, in the following roundabout way:—

How many Canada Dollars are equal to £1 Halifax Currency ?

Answer : 4 Dols.

How much Halifax Currency goes to the Halifax Sterling ?

Answer : £100 Currency, equal to £90 Halifax Sterling.

How much Halifax Sterling goes to the actual British Sterling ?

Answer : £108 Halifax Sterling, when the Exchange is at

Par, equal to £100 British Sterling ;

and the calculation accordingly is :

? = 1 Dol. Halifax Currency.

If 4 Dols. = £1 Halifax Currency.

If Halifax Currency £100 = £90 Halifax Sterling.

If Halifax Sterling £108 = £100 British Sterling.

If £1 = 240 pence.

432 = 2160 = 50d British, or 4s 2d.

Accordingly

1 Dollar Halifax Currency = £0 5s 0d, or 60 Pence Halifax Pounds.

= £0 4s 6d „ 54 „ „ Sterling.

= £0 4s 2d „ 50 „ British Sterling.

£1 in Halifax Currency = Dols. 4 in Dollars.

= £0 18s in Halifax Sterling.

= £0 16s in British Sterling.

£1 in Halifax Sterling = Dols. 4.444 ct. in Dollars.

= £1.111 ct. in Halifax Currency.

= £0 18s 6 $\frac{2}{3}$ d in British Sterling.

£1 in British Sterling = Dols. 4.80 in Dollars.

= £1 4s in Halifax Currency.

= £1 1s 7 $\frac{1}{2}$ d in Halifax Sterling.

The Dollar is worth 50 Pence British, or

Dols. 100 = £20 16s 4d British

Since Dols. 100 = £25 Halifax Currency.

Halifax Currency £25 = £22 10s Halifax Sterling.

Dols. 100 are £22 10s Halifax Sterling

(the same as the New York valuation) ;

but, as upon the Dols. 100 we have to pay the Exchange Premium of 8 per cent. between Halifax Sterling and British Sterling, which raises the amount

To Dols. 108 = £22 10s } British Sterling.
 So Dols. 100 are = £20 16s 4d }

The Par of Exchange from London on Canada is accordingly

Dol. 1 = 4s 2d,

and from Quebec to London

Dol. 108 = £22 10s

or 8 per cent. Premium.

MEXICO.

The Monetary Unit of Mexico is
The Peso or Dollar,
divided into 8 Reales of 4 Cuartillos each,
or 100 Cents, in accounts.

The Coinage is represented by

16 Dollars pieces	Doubloon	} Gold.
8 " "	$\frac{1}{2}$ "	
4 " "	$\frac{1}{4}$ "	
2 " "	$\frac{1}{8}$ "	
1 Dollar piece	$\frac{1}{16}$ "	
1 Peso or Dollar		} Silver.
$\frac{1}{2}$ " "		
$\frac{1}{4}$ " "		
$\frac{1}{8}$ " "		
$\frac{1}{16}$ " "		
$\frac{1}{32}$ " "		

and Copper pieces, Cuartillos ($\frac{1}{32}$ Dollar), and Tlacos ($\frac{1}{64}$ th Dollar).

The subjoined Table shows the legal weight and fineness of the pieces :—

GOLD.		Weight in Grammes.	Fineness in Millièmes.
Doubloon		27.067	. 875
$\frac{1}{2}$ "		13.533	. 875
$\frac{1}{4}$ "		6.767	. 875
$\frac{1}{8}$ "		3.383	. 875
$\frac{1}{16}$ "		1.692	. 875

SILVER.	Weight in Grammes.	Finences in Millièmes.
Dollar	27·067	900
$\frac{1}{2}$ "	13·533	"
$\frac{1}{4}$ "	6·767	"
$\frac{1}{8}$ "	3·383	"
$\frac{1}{16}$ "	1·691	"
$\frac{1}{32}$ "	0·845	"

The Gold Coinage, though the Doubloon is nominally worth 16 Dollars, varies in price. It is found to be inferior in quality by 4 to 10 Millièmes, like the Spanish Doubloons. The price in the London Market ranges between 73s and 74s 8d per oz., according to supply and demand.

The Metallic value of the Silver Currency is on a Par with the nominal value.

The Copper Coins are simply tokens; they are much below their nominal value.

The Coinage of Mexico has always been rather uncertain in quality and weight. Many of the older Mexican Dollars contain traces of Gold, and were worth 1 to 2 per cent. more than others. The Coinage is now somewhat more accurate in quality and weight, though it is still very rough.

Mexico is one of the great sources of the World's supply of Silver. It is estimated that, since the discovery of the land, nearly 4,000 millions Dollars, or 800 millions Sterling in Silver have been drawn from its Mines, of which about one-half has been coined in Mexican Dollars.

The Mexican Dollar exercises a vast influence in the Bullion and Monetary transactions of a very considerable part of the World. It arrives here in England in large masses, to be re-shipped abroad, where it is either employed as Coin in its unaltered shape, or re-melted and re-coined. The Mexican Dollar is known in China, India, Central and South America, and in the remotest corners of the East.

The weight of the Mexican Dollar is 27·067 grammes (0·868 oz. Troy) 900 fine; its value in British Sterling is accordingly 51½ Pence.

The Mint Par between London and Mexico is .
Dol. 1 = 51½ Pence.

WEST INDIES.

The Monetary Unit in the West Indies is
The Dollar,
divided into 100 Cents for accounts.

In the **British West Indies**, in Jamaica, Barbadoes, the Bahamas, &c. both the Dollar and British Sterling Money are used, the Dollar being valued at 4s 2d Sterling; American, Mexican, Spanish, and other good Silver Coins are also current. For Jamaica Half Dollars were formerly Coined; for Demerara and British Guiana three, two, and one Guilder pieces and fractions; but the Dollar is now everywhere the recognised Standard; in Exchange with England the Dollar may be taken at 4s 2d. The British Sterling Money is also used, subject to the usual charges for remittance.

In the **Spanish West Indies**, *i. e.*, Havannah, Porto Rico, &c., the same Monetary System prevails as in Spain; but the quotation of the Exchange on London is often made upon the same basis as in New York, *viz.*, by a Premium on the old valuation of Dols. 100 = £22 10s; and this Premium is subject to about the same fluctuations.

In **Martinique** the French system prevails.

In **Hayti** the Monetary Unit may be said to be the Gourde, or Haytian Piastre, divided into 100 Centimes or Sous, but only divisionary Coins in Silver have been struck. The country suffers from an over issue of Paper Money, and the Gourde varies in value from 2½ Pence upwards. An attempt to introduce the French Coinage system has been made, but without success, for want of Bullion.

In the Republic of St. Domingo Monetary matters are in about the same unsatisfactory state; the value of the Dominican Piastre having been down so low as 3 Farthings. For Exchange transactions with other States hard Dollars are required.

In other parts of the West Indies the Moneys of the respective Mother Countries are used side by side with the Dollar. In the Island of St. Thomas, which now belongs to the United States, the American system will probably be introduced.

CENTRAL AMERICA.

The Monetary Unit of the States of Guatemala, San Salvador, Honduras, Nicaragua, and Costa Rica, is the Peso, or Dollar, divided into

8 Reales of 16 Cuartos,
or 34 Maravedis each,
or into 100 Centavos.

The Gold Coinage consists of the Doubloon and its subdivisions, the Silver Coinage of the Dollar and its subdivisions. These Coins differ in quality from the Mexican pieces. The $\frac{1}{4}$ Doubloon issued by Costa Rica weighs 6.205 grammes 845 fine. Foreign Coins, notably South American, Mexican and Spanish Dollars, and 5 francs pieces are the principal currency. It is very likely that a re-organisation of the Monetary System will take place before long. The 5 Francs piece is at present the representative piece, it is valued at a Dollar; computed upon this basis, the Central American Dollar of account is worth

47.580 Pence,
or 3s 11 $\frac{1}{2}$ d.

The Exchange in Guatemala on London is generally taken at 5 Dollars per £, with a premium to make up the difference. Accordingly a premium of about 1 per Cent. makes the Par.

SOUTH AMERICAN REPUBLICS

OF

NEW GRANADA, ECUADOR, PERU, BOLIVIA, CHILI, VENEZUELA,
AND URUGUAY.

The Monetary Unit of the South American Republics
is also
The Dollar,
divided into 100 Cents,
or 8 Reales.

The Spanish, Mexican, and other Dollars, and 5 Francs pieces
form the larger part of the Currency throughout the States.

NEW GRANADA.

The Coining of the Doubloon and its subdivisions has been
abandoned, there being issued instead :—

10 Pesos pieces	Condor	} Gold.
5 " "	$\frac{1}{2}$ "	
2 " "	$\frac{1}{5}$ "	
1 Peso, or Dollar.		
$\frac{4}{5}$ "	$\frac{4}{5}$ "	(Peso Macuquina)
$\frac{1}{5}$ "	2 Reals.	

(The Peso = 10 Reals.)

The Condor weighs 16·400 grammes 900 fine, and the Silver
Peso 25 grammes 900 fine (the same as the French 5 Francs piece).
The proportion of value between Gold and Silver is thus 1 to $15\frac{1}{4}$,
and the Peso being of the same value as the 5 Francs piece, its Par in
British Sterling is

47·580 Pence, or 3s $11\frac{1}{2}$ d.

In Peso Macuquina, or 8 Real pieces (worth 20 per cent. less
than the Peso of 5 Francs), the **Exchange** is quoted at 6 Pesos
Macuquina per £1 Sterling, with the usual Premium.

In **ECUADOR** Doubloons of the same value as the Mexican pieces were formerly issued; but in 1866 the same system as in New Granada was introduced. We have not yet received an account of this new Coinage; but there has been coined in Ecuador, since 1858, a Silver Peso of precisely the same value as the 5 Francs piece, divided into 5 Reales, or 10 Decimos. The Macuquina Piastre of 4 Reales, or 10 Decimos, is also coined in Ecuador.

In **PERU** the old Doubloon Coinage has also been abandoned (although the Coin is still current at 17 Dollars). A new Coinage Law of 1857 ordered the coining of Gold Sols (28·406 grammes 900 fine) to be worth 20 Dollars or Pesos of 23·7 grammes 900 fine, both with subdivisions. Very few of these Coins were made, for in 1864 a new system was introduced; the name of Sol for the Gold piece was given up, and applied instead to the Dollar, the following Coins being issued:—

		Grammes.			
20 Sols piece	32·258	900 fine	.	.	} in Gold
10 "	16·129	"	"	"	
5 "	8·640	"	"	"	
2 "	3·226	"	"	"	
1 Sol	1·613	"	"	"	
1 Silver Sol piece	25·000	"	"	"	} in Silver
$\frac{1}{2}$ "	12·500	"	"	"	
$\frac{1}{5}$ "	5·000	"	"	"	
$\frac{1}{10}$ "	2·500	"	"	"	
$\frac{1}{20}$ "	1·250	"	"	"	

thus establishing the exact proportion of 1 to 15½ between Gold and Silver. Copper Coins of 1 and 2 Centimes are also issued. The old Bolivian Dollars, which circulated largely, are now worth only ½ths of a Sol, and the new Coinage promises to be a healthy one.

The Silver Sol is thus precisely of the same weight and fineness as the 5 Francs piece, and upon both the Gold and Silver valuation the **Par of Exchange between London and Lima is**

47½ Pence per Sol.

In **BOLIVIA** Doubloons of the same fineness as the Mexican Doubloon have been coined; before 1856 the Silver Dollars were also of the same weight and fineness as the Mexican. Since that period a new Dollar has been issued, weighing only 19·830 grammes,

and of course is so much inferior in value. This debased Coinage will probably be supplemented by a new system similar to that adopted by the neighbouring South American States.

In **CHILI** the old system of Doubloons and Piastres has also been set aside, and since 1851 the new Coinage consists of

GOLD.

10 Posos pieces		Condor.
5 " "		$\frac{1}{2}$ "
2 " "		Escudo.

SILVER.

$\frac{1}{2}$ Poso piece.		50 Centavos.
$\frac{1}{4}$ " "		20 "
$\frac{1}{10}$ " "		10 "
$\frac{1}{20}$ " "		5 "

and Copper pieces of 1 and $\frac{1}{2}$ Centavo.

The Condor weighs 15·25 grammes 900 fine, and the Peso 25 grammes 900 fine (the same as the 5 Francs piece). Until 1860 the Silver Peso was the Standard valuation, but since then the Government, in order to stop the export of Silver (which in the old Coinage stood in the proportion of 16·4 to 1 of Gold) has issued the new Silver Coinage as above of lesser weight by 8 per cent. (thus reducing the proportion to about 15 to 1), and has adopted the Gold valuation.

The Condor weighing 15·25 grammes 900 fine, its value in Sterling is

449·85 Pence, or £1 17s 5 $\frac{7}{8}$ d.

and the Peso is worth 45 Pence.

Upon this basis the **Par of Exchange** between **Valparaiso** and **London** is therefore

1 Peso Gold = 45 Pence.

In **VENEZUELA** the Gold Doubloon and the Silver Dollar are current, side by side with the American Eagle and the British Sovereign. The Macuquina Piastre, worth 20 per cent. less than the Mexican Dollar, which was formerly divided into 8 Reales, is now divided into 10 Reales of 10 Centavos each; and in 1858 pieces

of 5 and 2 Reales, and of 1 and $\frac{1}{2}$ Reale were struck. The Monetary System of this State is on the point of undergoing an alteration.

For Exchange transactions the **Mexican Dollar** forms the basis.

In **URUGUAY** the **Peso Corriente** was formerly coined, and, although it has now disappeared from circulation, it continues still to serve as the Unit of Account.

Foreign Gold Coins and Dollars are much used; but, in conformity with the Law of 1854, a new Coinage is issued, consisting of

GOLD,

Based upon the old Spanish Dollar or Patacon, divided into 1000 Centesimos.

4 Patacon pieces or 5 Pesos Corrientes.

2 " " $2\frac{1}{2}$ " "

1 " " $1\frac{1}{4}$ Peso Corriente.

SILVER,

On the **Peso Corriente** basis.

$\frac{1}{2}$ **Peso Corriente** pieces = 5 Reales.

$\frac{1}{4}$ " " " = $2\frac{1}{2}$ "

$\frac{1}{8}$ " " " = $1\frac{1}{4}$ "

And Copper pieces of 40, 20, and 5 Centesimos.

This Coinage fixed the value of the **Peso Corriente** at $\frac{1}{4}$ ths of the Patacon, or at 800 Centesimos or Reïs.

The 4 Patacon piece weighs 6·730 grammes 875 fine, and is worth in British Sterling 193 Pence. The 5 Real Corriente Silver piece weighs 13·010 grammes 833·3 fine, and is worth 22·927 Pence.

Calculated on the value of the four Patacon piece, the Spanish Dollar, the fourth part of it, is worth **48½ Pence**, as a basis for the **Par of Exchange** between **Monte Video** and **London**.

BRAZIL.

The Monetary Unit of the Brazils is
The Milreïs,
divided into 1000 Reïs.

This Milreïs was formerly of the same value as the Portuguese Milreïs, the Coinage consisting, up to 1833, of

GOLD.		
Dobras	of	12800 Reïs.
$\frac{1}{2}$ "	"	6400 "
Moedas	"	4000 "

SILVER.		
Double Crusado	of	960 "
" Patacon	"	640 "
Patacon	"	320 "
&c., &c.		

These Coins were gradually raised in value, until it was settled, in 1846, that the Dobra should be held worth 32000 Milreïs (150 per cent. more than its original value), and the Double Crusado 1920 Milreïs (double its original value). This woeful depreciation had its origin in the Over-issue of Paper Currency, foisted upon the people by the Government. In 1849 Brazil definitely adopted the Gold Standard, and the Coinage now consists of

GOLD.		SILVER.	
20 Milreïs	pieces	2 Milreïs	pieces
10 "	"	1 "	"
		$\frac{1}{2}$ "	"

And Copper pieces of 40 and 20 Reïs.

The weight and fineness of these pieces are

GOLD.	Grammes	Millièmes.
20 Milreïs	17.927	916.667
10 "	8.963	"

SILVER.	Grammes.	Millièmes.
2 Milreïs	25·500	916·67
1 „	12·750	„
$\frac{1}{2}$ „	6·375	„

The proportionate value of Silver to Gold is accordingly as 14·06 to 1; and as the price of Silver is thus raised beyond its universal Market value, a special law has been passed, limiting its use as a legal tender to the amount of 20 Milreïs.

Coin is rare in the Brazils; British Sovereigns and Dollars are much used; but **Paper Currency** is most abundant, at excessively depreciated rates.

The legal weight of the 20 Milreïs piece being 17·927 grammes of British Standard fineness, the value of the Coin is 538·614 Pence, or £2 4s 10 $\frac{3}{4}$ d,

making the £1 Sterling = 8·911 Reïs.

The Mint Par of Exchange between Rio Janeiro and London is accordingly

1 Gold Milreïs = 26·93 Pence;

but computed upon the basis of Paper Currency value, in February 1868 the

1 Paper Milreïs was worth only 15 Pence.

LA PLATA STATES.

The Monetary Unit is

The Dollar or Peso,

divided, for accounts, into 100 Centesimos, or into

8 Reales or 80 Decimos;

but in actual Currency this Unit is represented chiefly by Paper Money, with which the country is deluged. Originally the Peso Duro or Hard Dollar was worth about 52 Pence; but the Paper

Currency founded upon it is excessively depreciated; at present the Paper Piastre has actually dwindled down to 2 Pence, the Government paying 1 Dollar Metallic Currency for 25 Paper Dollars.

Of course, a Paper Currency of this nature is altogether out of the question as a basis for International Valuation.

The Metallic Money current in the country consists chiefly of the old Doubloons, which legally should be of the same weight and fineness as the Mexican Doubloons, and of Silver Dollars of the same value as the Mexican. (We need not note here the actual discrepancies existing between these Coin and their Mexican prototypes.)

Side by side with the Doubloon and the Dollar all sorts of Foreign Coins circulate, and a Tariff has been laid down regulating their value in Paper Currency. This Tariff, however, is altogether ineffective, as the fluctuations in the value of the Paper Currency are too violent.

The British Sovereign is taken at Dols. 4·96 in Silver Piastres, and the Exchange on London is regulated by the Gold Doubloon or Onza, weighing 27 grammes 875 fine.* The Onza is worth in British Gold 64·528 Shillings, giving the Par of Exchange between London and Buenos Ayres as

48½ Pence per Peso.

AFRICA.

BARBARY STATES.

In **TRIPOLI**, the same as in Egypt, the Unit of Account is

The Turkish Piastre,
divided into 40 Paras.

20 Piastres make 1 Mahbub.

* The Onza, however, is not really up to this Standard fineness.

The old Tripoli Piastre is counted as $2\frac{1}{2}$ Turkish Piastres; but this is only money of account in the interior. Of actual native coins the "Gersch" alone, with its divisions into half and quarter pieces, deserves notice. This coin weighs 12.182 grammes, and is 354 fine. It is taken for 140 Paras ($3\frac{1}{2}$ Turkish Piastres). But the far larger portion of the metallic circulating medium consists of Foreign Coin, chiefly Spanish Doubloons, Ducats, Napoleons, Maria Theresa and Spanish Dollars, and 5 Francs pieces.

French Coin in fact is much increasing in favor in the Regency of Tripoli.

The **Mahbub** of 20 Piastres is taken as the basis for **Exchange** transactions, being valued at $4\frac{1}{2}$ Francs, equivalent to about 3s 7d.

In **TUNIS** the Unit of the Money of Account is
The Piastre,
divided into 16 Caroubs,
of $3\frac{1}{4}$ Aspres, or 39 Bourbines each.

The native coins are the old Zechins or Sequins of last Century, and the Gold Mahbub, which passes for about 6 to 7 Piastres, and is worth in Gold about 3s 10d, and old Silver Piastres (with subdivisions) of different weight and fineness (270 to 406); the more modern Silver Piastre weighs 11.400 grammes 315 fine, which gives a metallic value in Sterling of about 6½d. Foreign Coin, such as Dollars, and especially French money, are much used.

Paper Currency.—Notes of the State Bank for 1, 2 and 8 Piastres circulate as forced currency. They are taken in payment at the Bank at a discount of 4 per cent.

The Tunis Piastre is valued at 75 French Centimes in Exchange with France; this makes the English equivalent about $7\frac{1}{2}$ Pence, the actual Exchange varying as a matter of course.

In **ALGERIA** the French Monetary System prevails.

In **MOROCCO** the Export Traders keep Accounts in
Spanish Dollars,
divided into 100 Cents.

The Unit of Account of the Empire is
the Mitskal,
divided into 10 Uckias, or Ounzes,
of $4\frac{1}{2}$ Mazunas,
of 6 Quartols,
of 4 Flus each.

The Coinage consists of quaint, rough, gold pieces, called

Madridia of about 10 Dollars in value.

Benky " 2 " "

Half do. " 1 Dollar "

Mitskal pieces $\frac{1}{2}$ " "

The quality of these pieces is very low, even down to 255 fine. In Silver, rough, round or square Mitskals are in circulation, also Ounzes ($\frac{1}{16}$ th Mitskal), with pieces of 6 and 4 Mazunas, and 1 Mazuna (called Barbary Penny). There is an extensive amount of Copper Coin in circulation, of various kinds and denominations, down to the most insignificant pieces, as worthless as Chinese cash. The Gold Benky is taken at 32 ounces.

Foreign Coins, especially Spanish Dollars, are current in the Empire, the Dollar being taken at 16 ounces. From this the value of the Mitskal may be computed at about 32 Pence Sterling.

The **Exchanges** are made in **Spanish Dollars, at 50d per Dollar**, more or less.

WEST COAST OF AFRICA.

The Dollar constitutes again the general recognized Monetary Unit and Standard of value all along the Western Coast of Africa. In **SIERRA LEONE** the Dollar and its divisions

(Coin struck for the Colony in England), and Danish Coin are current. Danish, French, and Dutch Coin circulate in the Danish, French, and Dutch Settlements on the Coast. The principal business all along the Coast is done by barter, the natives paying in Olive Oil and other produce.

The *Cowrie* shells, so much valued for ornament by the blacks, serve still as a medium of Exchange in trading with them. At the trading ports the **Spanish Dollar** remains the basis for **Exchanges with Europe**.

THE EAST COAST OF AFRICA.

In the Portugese Settlements on the East Coast of Africa, the trade is chiefly carried on by barter. The Portugese Milreïs, with its subdivisions, serves as Money of Account.

In Madagascar the Spanish Dollar cut into halves and quarters is used.

ABYSSINIA.

The Maria Theresa Dollar is the favourite Coin in Abyssinia. The Gold Wakih* is estimated of the value of 5½ Sequins, equal to about 56s Sterling. Cotton Cloth and Salt also pass as mediums of Exchange. 11 yards of Cotton Cloth being held equal to 30 pieces of Salt, worth about 3s British Money. The English invasion of the country is likely to work important changes in the Abyssinian Currency.

* The Wakih is the 12th part of the Abyssinian Pound, or Rotolo, equal to about 635 Grammes. The Wakih is equal to about 52·916 Grammes ; it is subdivided into 10 Drachmes.

PERSIA.

The Monetary Unit of Persia is
 The Gold Toman,
 divided into 10 Sahibkiran or Zabkran,
 of 2 Penebats each,
 subdivided into 10 Shahis,
 of 10 Kasbegg each, or
 1 Toman = 200 Shahis or 2000 Kasbegg.
 Accounts are carried to the Dinar, which is the $\frac{1}{1000}$ th
 part of the Toman.

The Coinage is represented by

The Gold Toman and Half Toman.

The Toman is a rough Coin, made of nearly fine Gold; older issues differ in weight and quality, but the Toman of 1839 weighs 3·5 grammes about 970 fine.

It is intended to issue a new Gold Coinage, of the fineness of British Standard.

The Silver Coinage also is made of nearly fine Metal.

The Sahibkiran or Zabkran ($\frac{1}{10}$ Toman) weighs 5·380 grammes 962·5 fine. (The new Coins are to be 880 fine.)

The Penebat ($\frac{1}{20}$ Toman) weighs 2·610 grammes 962·5 fine.

There are also Persian Rupees of different weights and quality. The Rupee of the latest Coinage weighs 9·156 grammes 945 fine. (The new Silver Coinage is to be 880 fine.)

The Copper Coinage consists of the Shahi and its subdivisions, down to the Kasbegg, or $\frac{1}{10}$ Shahi.

The Persian Coinage, as a rule, consists of rough and irregular pieces; the statement of the weight and fineness given here of the different pieces is taken from Assays made, and not derived from the supposed prescriptions of a Mint Law.

The full-weight Toman is said to be equal to the European Ducat. It is worth in British Sterling 9s 3½d; this corresponds relatively with the value of the Russian Half Imperial, which is current in the Country at 1¼ Toman.

The Silver Zabkran, or ⅓th Toman, is worth about 11½d, which gives the proportionate value of Gold and Silver very nearly as 1 to 15½.

Tomans, it should be stated, are frequently found "clipped," and they are generally dealt in by weight. Russian, Turkish and Austrian Gold Coins also circulate in the country.

Exchange transactions direct with England are very limited; but the

Toman at 9s 3½d may be taken as the Par of Exchange.

INDIA.

The Monetary Unit of British India is the so-called Company's

Silver Rupee,
sub-divided into 16 Annas,
of 12 Pice each;
the Rupee is divided also into
4 Quarters,
and each Quarter into 100 Reas.

In former times Rupees of different values were current in India, such as the Sicca, the Sonat, the Bombay, the Arcot Rupee, &c., but since 1835 the Company's Rupee has superseded all others, and forms now the principal legal medium of Exchange. The Sicca Rupee, however, is still used as valuation for certain descriptions of merchandize.

The present Coinage of India, is represented by

GOLD.

30 Rupees pieces	Double Gold Mohur.
15 "	Gold Mohur
10 "	$\frac{2}{3}$ "
5 "	$\frac{1}{3}$ "

SILVER.

1 Rupee Piece
$\frac{1}{2}$ "
$\frac{1}{4}$ "

and Copper pieces of 3 Pice, 1 Pice and $\frac{1}{2}$ Pice.

$\frac{1}{2}$ Pice being equal to 20 Cash (the minute fractional change of the Asiatics in the East).

The subjoined table shows the weight and fineness of these pieces.

GOLD.

	Weight in Grammes	Fineness in Millièmes.
Mohur ...	11·664 (180 Grains Troy)	916·667

The Double Mohur and the divisions in proportion.

SILVER.

Rupee ...	11·664 (180 Grains Troy)	916·667
$\frac{1}{2}$ " ...	5·832 (90 ")	"
$\frac{1}{4}$ " ...	2·916 (45 ")	"

The Silver Coins are accordingly of equal proportionate value. The Gold Mohur is precisely the same weight and fineness as the Silver Rupee, and the proportionate value of Gold to Silver is 1 to 15, but, although attempts have been made to fix this value legally upon the Gold Mohur, they have been abandoned, and the Gold Coinage is at present "Commercial Money" in India. Still, the Gold Mohur is making its way into public favour, and is now often valued above 15 Rupees; sometimes even as high as $15\frac{2}{3}$ Rupees. We hear, however, that but few Mohurs are coined at the Mint.

The Silver valuation is emphatically the Standard in British India, and Silver is so far the only legal tender.

Indeed India is the great store-house for Silver. Many Millions Sterling a year have gone from Europe and elsewhere to India and

the East, to pay for cotton, tea, seeds, and the manifold productions of Eastern Asia, the balance of trade being so largely against Europe. From 1855 to 1865 alone 200 Millions Sterling Silver have been shipped from England, from Marseilles, and elsewhere.

In fact, it is the demand for Silver in India which has so greatly disturbed the Silver Coinage of France, and other parts of Europe, and given rise to the wish to demonetise Silver to a certain extent.

In consequence of the Crisis of 1866 there has been no Silver sent to India for the last three years; indeed it is said that Silver is about to be returned to England; but, with the recovery of trade, we must expect that, so soon as shipments of goods on a larger scale shall again be effected from India, Silver remittances to that quarter will have to be resumed.

The greater bulk of the Silver sent to India is said to be hoarded by the Natives.

The Mint of Calcutta Coins Gold pieces for private persons at a charge of 1 per cent.

On Rupees in Silver there is a seignorage of about 2 per cent. and $\frac{1}{10}$ th for melting. The Remedy of the Calcutta Mint is,—for Gold $2\frac{1}{2}$ per mille, for Silver 3 per mille, both for weight and fineness.

The Unit of British India weights is the Tola = 180 grains Troy.

The legal weight of the Rupee is 1 Tola, the legal fineness $916\frac{2}{3}$. The Tola, if fine metal (B $17\frac{1}{2}$ dwts.), should accordingly be worth 1·0886 Rupee. The Mint actually pays $106\frac{1}{4}$ Rupees for 100 Tolas fine Metal, which shows a Mintage charge, including probably the loss by melting, of about $2\frac{1}{4}$ per cent. The greater portion of the Bar Silver arriving in India, is sold to the Merchants in the Bazaars, where from $106\frac{1}{2}$ to 107 Rupees are paid for 100 Tolas of fine Silver.

The Rupee weighing 180 grains, $916\cdot667$ or 220 dwts. fine, the value of the piece is

22·60886 Pence,

and the Mint Par between Calcutta and London is accordingly
1 Rupee = 1s 10½d.

SINGAPORE.

The Monetary Unit is
The Dollar,
divided into 100 Cents.

Spanish, Mexican and other Dollars and Rupees are the divisional fractions of the several Coins circulated in Singapore.

The **Exchange** on London is computed on the **Dollar basis**.

BURMAH.

In the Burman Empire and in the Bazaars of Rangoon the natives still make and receive payments in Metal by weight,—Lead for small payments, Gold and Silver for larger payments.

The usual weight for Silver is the Tical = 258 English Troy grains. There are three different descriptions of Silver, of varying fineness, sold by the Tical weight.

In the Port of Rangoon, which is now British, the Company's **Rupee is the Unit** for dealings between Merchants, and for **Exchange**.

SIAM.

The Monetary Unit is
The Bat or Tical,
divided into 4 Salungs, of 2 Fuangs each.

(The Fuang is reckoned equal to 800 Cowrie shells). 80 Bats are equal to 1 Cattie, and 100 Catties are equal to 1 Pical Silver. With the exception of the small change in Cowries, the Siamese currency consists entirely of Silver, the coin being irregular pieces, or little bent bars, stamped with figures. From assays made, it appears that the Bat is worth about 30d Sterling, **5 Bats** being equal to **3 Mexican Dollars**, which forms the only basis to be depended upon for computing the **Exchange**.

COCHIN CHINA.

The Monetary Unit is
the Kwan,
divided into 10 Mas, of 60 Sapeks each ;

But there is no actual Gold or Silver Coinage, the Kwan and its divisions being simply pieces of Silver and small Coins made of a Copper and Zinc Alloy like the Chinese cash. A Kwan is reckoned equal to about $\frac{2}{3}$ rds of a Dollar, but the price is said to vary greatly. Gold and Silver in Lumps or small Bars are dealt in by the Tael, which is about the same weight as the Chinese Tael.

The invasion by the French will no doubt tend to introduce the 5 Francs piece, and the French system generally.

DUTCH POSSESSIONS IN THE EAST INDIES :
JAVA, SUMATRA, BORNEO, &c.

The Dutch Monetary System is in force in the Dutch
Possessions in the East Indies. The Unit is
The Guilder, or Florin,
divided into 100 Cents,

which is now coined expressly for India.

There is, however, a former valuation of the old Dutch Indian Company, which still maintains its position. A low kind of Copper or Brass Money, similar to Chinese cash, is also in circulation.

The Batavia Bank issues Paper Money.

Spanish and Mexican Dollars form a large portion of the Medium of Exchange.

Exchanges on London are computed on the basis of the Florin, the same as in Holland.

PHILIPPINE ISLANDS.

The Monetary Unit is the Spanish Dollar,
divided into 8 Reales,
of 20 Cuartos each ;
or into 100 Cents.

The Par of Exchange is the same as in Spain.

CHINA.

The Monetary Unit of China is
The Tael,
divided into 10 Mace,
of 10 Candareens each.

A Money of Account founded on weight, the Tael being simply this weight of Sycee Silver. Gold and Silver are dealt in by this weight in Bars and Lumps and other shapes.

The Coinage proper of China consists of the so-called *Cash* (*Le* in Chinese), of which 1000 were formerly held equal to the Tael ; but it takes now about 1400 to make up a Tael. This Coinage is made of 6 parts of Copper and 4 of Zinc ; it is stamped with Chinese characters. The *Cash* pieces have each a square hole in the centre, so that they may be strung together in rows of 50 or 100. Originally these pieces were worth about a Farthing each ; but their value has since considerably decreased, and such large quantities of them are manufactured by private parties, that they are worth at present (at the rate of 1400 per Tael) only $\frac{1}{3}$ th Farthing. This curious money is used between the Chinese chiefly for retail business ; but from its fluctuating price and want of metallic value it cannot afford a basis for Exchange transactions.

The Chinese Tael weight, or Canton weight, as it is called, is equal to 580 Grains Troy (579·84); but there is another Tael weight in use besides the Canton weight, viz., the Government, or Haikwan weight, of which 98 Taels are equal to 100 Taels Canton weight. Both weights are used for Bullion.

Small oblong Bars or Ingots of Gold are dealt in, weighing from 9 Taels upwards; they are generally 98 touch (about 980 fine); they differ much in fineness, but the quotation is made at 98 touch. Silver is generally cast into small shoe-shaped Bars, called Sycee. There are three different kinds of Sycee, viz:

Haikwan Sycee, assayed and marked by the Government, varying in fineness, but on the average about 980 fine.

Canton Sycee, not marked by the Government, but of about the same fineness as the Haikwan Sycee.

The Shanghai Sycee or Currency, which is either cast of melted-down Mexican Dollars, or consists simply of Mexican Dollars, which are sold by weight. The Shanghai Sycee Bars are from 896 to 902 fine.

The Assays, on the whole, are not much to be depended upon, except as regards the latter Currency, made from Foreign Coin.

If the Haikwan weight Tael or Haikwan Sycee be taken as 980 fine, and the Canton weight Tael of Shanghai Sycee as 898 fine, it will be found that 111·4 Taels Shanghai Currency are equal to 100 Canton weight Taels of Haikwan Sycee; and as the Canton weight Tael of 580 grains of Shanghai Currency constitutes the type which represents the Tael for Exchanges, and the full Mexican Dollar weighs 417·7 grains,

$$\begin{aligned} 1 \text{ Tael of Shanghai Currency is} &= 1\cdot3885 \text{ Dollars} \\ \text{or } 1 \text{ Dollar} &= 0\cdot7202 \text{ Tael} \end{aligned}$$

As a rule 720 Taels are reckoned equal to 1,000 Dollars. The value of the Tael Shanghai currency is therefore exactly $71\frac{1}{4}$ Pence, or 5s $11\frac{3}{4}$ d.

The Canton Sycee being 980 fine, there is the same weight of fine Silver in 100 Taels Canton, as in about 109·2 Taels Shanghai Currency; and fine English Bar Silver being 996 Touch (B 17), there is the same amount of fine Silver in 100 Taels of it as in 111 Taels of Shanghai Currency.

Some of the Chinese Sycee Silver (that obtained from Chinese Mines) contains Gold, in the proportion of from 10 to 15 grains per 12 oz., which the Chinese do not know how to extract; this makes a difference of $1\frac{1}{3}$ to 2 per cent. in the value of this Doré Sycee.

Gold Bars we find quoted, at the end of 1867, 98 Touch = 168·5 Taels Shanghai Currency per Bar of Taels 9·72 Haikwan weight This is equal to 9·91 Canton weight, and equal to Taels 10·81 Canton weight of 898 fine; which gives, at 168·5 Taels Silver Currency of Shanghai, a proportionate value of 1 part of Gold to 15·58 of Silver.

A Mint was established at Hong Kong some years ago, which has coined some very pretty Dollars, stamped with English as well as Chinese characters. From some cause or other—perhaps that the supply of Silver by merchants is not constant enough—this Mint has not as yet done much good.

Paper Currency.—The Chinese Government issues no Bank Notes; but certain native Bankers and Merchants of great credit, carrying on business in the interior of the country, issue Promissory Notes from small amounts up to 100 Taels, which circulate in the localities in which the issuing Establishments are situated.

The Par of Exchange between London and Shanghai is
1 Tael = 5s 11½d.

JAPAN.

The Monetary Unit of Japan is
the Japan Tael,
divided into 10 Mas=

100 Candareens=1000 Leni, or Cash.

Upon the same system as in China. But this is only a Money of Account, represented solely by the small and almost valueless Cash,

or Leni pieces, which are strung together, the same as in China. The more suitable Unit for our purpose is

the Silver Itziboo,

divided into half and quarter pieces, with a new Copper Coinage to match, and represented also by a Gold Coinage.

The Japanese Coins are very curious. The Gold pieces are flat oblong plates, rounded at the ends, and stamped with characters; some of them, of oblong shapes with square corners, are thicker than these, and made of very inferior metal, simply gilt over.

The Silver Coinage is also square cornered; that of recent date bears Japanese figures, impressed partly with concave and partly with convex stamps.

When, after long seclusion from the rest of the world, some of the Japanese Ports were opened to Foreigners, it was found that Gold stood at a much lower valuation in Japan than in other parts of the World. The chief Gold Coin, the Cobang, weighed about 13 grammes (200 grains Troy), and was about 650 fine (though the Coins differed greatly in fineness). It was worth accordingly about 23 Shillings. The principal Silver Coin, the Boo, or Itzi Boo (*i.e.* one Boo), weighed nearly 9·350 grammes, of about 900 fine, and was worth accordingly 1s 5½d, and as 4 Itziboos Silver were counted as equal to 1 Gold Cobang, the proportionate value of fine Gold to that of fine Silver stood accordingly at about 1 to 4. It followed naturally that the American and European traders, giving Dollars for Itziboos, speedily exchanged the latter for Gold Cobangs, drawing Gold away from Japan, at an enormous profit to themselves.

The Japanese, of course, soon became aware of this, and a Revolution in their Monetary Valuation followed. The Gold Cobang was, after a period during which its circulation was forbidden on pain of death, reduced to $\frac{1}{4}$ th of its previous size, and instead of weighing 200 grains Troy, it now weighs only 50 grains, and is worth about 5s 7d. The Itziboo weighs now 8·700 grammes or 134¼ Troy grains, and is of the same fineness as the Mexican Dollar; 100 Dollars being reckoned equal to 312½ Itziboos. This makes the value of the Itziboo 1s 5½d.

The former disproportion in the value of Gold and Silver has

thus been effectively removed, and Gold and Silver bear now the same proportionate value in Japan as in the rest of the World,—1 to 15½.

The Japanese Coinage is now represented by—

GOLD, 650 FINE.

100 Boo pieces, the Obang (rarely seen)	} oblong, with rounded ends.
4 „ „ the Cobang	

GOLD AND SILVER ALLOY, ABOUT 300 FINE, GILT OVER.

2 Boo pieces, the Niboo	} oblong, with square corners.	
½ „ „ the Nishi		
SILVER, 900 FINE.		
1 „ „ the Itziboo		
¼ „ „ the Ishi		

and Copper Coins.

The quotation of the Itziboo varies at from 312 to 313 per 100 Dollars. In Exchange transactions the Mexican Dollar is used, giving the Par of

51½ Pence per Dollar.

SANDWICH ISLANDS.

The Monetary Unit is

The Dollar,

divided into 100 Cents,

principally represented by American Gold and Silver Coin, but also by Mexican, Spanish, and other Dollars, and 5 Francs pieces.

Exchange Par 51½ Pence per Dollar.

TABLE OF THE VALUE OF THE PRINCIPAL COINS.

We subjoin a Table of the value of the principal Coins.

The first column shows the full nominal value of the Coin as per Mint valuation made at the place of issue, without any deductions whatsoever for Mint Remedies or abrasion. Some of the Gold Coins have a variable price at the place where they are issued, which must be borne in mind.

The second column gives the full equivalent, to $\frac{1}{3}$ Penny exact, in English Money, at the Par of Exchange. Some of the Gold Coins having a variable price at the place where they are issued, cannot be valued by the Par; in such cases the actual Gold value is given.

The third column gives the Metallic value of the Coin, with due allowance made for Mint Remedies and loss of weight by abrasion. As regards abrasion in Gold Coin, we follow the English rule as to light Sovereigns, which is rather above the average for older Coin. For Silver we take a fairly worn Shilling as a guide. Excessive abrasion, tending to flatten or obliterate the impression, must be taken into separate account.

When the Exchanges are high, that is to say against England, the Coin is worth more than Par. The 20 Francs piece, for instance, at the Exchange of $25\cdot22\frac{1}{2}$ (the Par), is worth 15s $10\frac{3}{8}$ d; but, at the dearer Exchange of $25\cdot10$, it is worth 15s $11\frac{1}{4}$ d; and at the Exchange of 25, it is worth 16s, always less the charges of transmission.

When the Exchanges are low and favourable to England, the Coin is worth less than Par. Thus the 20 Francs piece at $25\cdot30$ is worth 15s $9\frac{3}{4}$ d; and at $25\cdot40$, 15s $8\frac{1}{8}$ d, less charges of transmission. In this case there is no demand for Gold for France; on the contrary, Gold is due to England, so that if 20 Francs pieces be melted down here, or sold as Gold, they will, if quite new and supplied in large quantities, fetch about 15s $9\frac{1}{2}$ d, and making due allowance for Mint Remedies and fair abrasion, single pieces will be worth 15s 9d. The same rules apply to all other Gold pieces; the charges for transmission are a separate item to be deducted.

In small Silver Coins Mint Remedies and loss by abrasion form a considerable item ; when such pieces come to be melted down, there is a loss of from 5 to 15 per cent. upon them.

Gold and Silver Coin, much worn, should be melted and assayed whenever there is a sufficient quantity at hand for the purpose.

We take GOLD at 77s 10½d per oz. Standard.

and SILVER at 60½d " "

		Full Nominal Value.	Full Value in Exchange.		Metallic Value, with due allowance for Mint Remedies and fair abrasion.	
ENGLISH			s	d	s	d
GOLD	Sovereign		20	—	19	10
	Half Sovereign . . .		10	—	9	10½
SILVER	Florin		2	—	1	9½
	Shilling		1	—	—	10½
	Sixpence		—	6	—	5½
	Threepence		—	3	—	2½
Crowns, Half Crowns, and Four-penny bits are no longer coined.						
FRENCH, BELGIAN, ITALIAN & SWISS		Frs. Cts.				
GOLD	100 Francs piece . .	100 —	79	3½	78	11½
	50 " 	50 —	39	7½	39	5½
	20 " 	20 —	15	10½	15	9½
	10 " 	10 —	7	11½	7	10½
	5 " 	5 —	3	11½	3	10½
SILVER	5 Francs piece . . .	5 —	3	11½	3	10
	2 " 	2 —	1	7	1	4½
	1 Franc } The new	1 —	—	9½	—	8½
	½ " } pieces are	— 50	—	4½	—	4
	¼ " } only 835	— 20	—	1½	—	1½
	} fine.					
Up to 1866 these pieces were all 900 fine of the same weight.						
GERMAN & AUSTRIAN		Thal. Gros.				
GOLD	Crowns } Varying	9 10	27	5	27	3½
	Half Crowns } in price	4 20	13	8½	13	7

		Full Nominal Value.		Full Value in Exchange.		Metallic Value, with due allowance for Mint Remedies and fair abrasion.	
		Thal.	Gros.	s	d	s	d
NORTH GERMAN							
SILVER	2 Thaler pieces . . .	2	—	5	10½	5	9½
	1 " . . .	1	—	2	11½	2	10½
	½ " . . .	—	5	—	5½	—	5½
	⅓ " . . .	—	2½	—	2½	—	2
	⅒ " . . .	—	1	—	1½	—	½
	⅙ " . . .	—	½	—	½	—	¼
SOUTH GERMAN		Glden. Kr.					
SILVER	3½ Gulden pieces . . .	3	30	5	10½	5	9½
	2 " " . . .	1	45	3	4½	3	3
	1½ " " . . .	2	—	2	11½	2	10½
	1 " " . . .	1	—	1	8½	1	7½
	½ " " . . .	—	30	—	10	—	9½
	⅓ " " . . .	—	6	—	2	—	1½
	⅒ " " . . .	—	3	—	1	—	¾
	⅙ " " . . .	—	1	—	½	—	¼
AUSTRIAN		Flrn. Cets.					
SILVER	3 Florin pieces . . .	3	—	5	10½	5	9½
	2 " " . . .	2	—	3	11	3	10
	1½ " " . . .	1	50	2	11½	2	10½
	1 " " . . .	1	—	1	11½	1	11
	½ " " . . .	—	25	—	5½	—	5½
	⅓ " " . . .	—	10	—	2½	—	2½
	⅒ " " . . .	—	5	—	1½	—	1
DUTCH							
GOLD	Double William	19	86	33	1	32	10
	William	9	93	16	6½	16	4½
	½ " } Varying in price.	4	96	8	3½	8	1
	Double Ducat	11	26	18	9	18	4
	Ducat	5	63	9	4½	9	0½
SILVER	Ryksdaaler . . .	2	50	4	2	4	0½
	Guilder . . .	1	—	1	8	1	7½
	½ " . . .	—	50	—	10	—	9½
	¼ " . . .	—	25	—	5	—	4½
	⅓ " . . .	—	10	—	2½	—	2
	⅒ " . . .	—	5	—	1½	—	1

		Full Nominal Value.	Full Value in Exchange.		Metallic Value, with due allowance for Mint Remedies and fair abrasion.	
SWEDISH		Riksd. Öre.	s	d	s	d
GOLD	Ducat—(varying in price).	8 50	9	3½	8	11½
SILVER	Speciedaler . . .	4 —	4	6	4	3½
	½ Speciedaler . . .	2 —	2	3	2	1½
	1 Riksdaler . . .	1 —	1	1½	1	0½
	½ „ . . .	— 50	—	6½	—	6½
	¼ „ . . .	— 25	—	3½	—	3
	⅙ „ . . .	— 10	—	1½	—	1½
NORWEGIAN		Spes. Skg.				
SILVER	Speciedaler . . .	1 —	4	5½	4	3
	½ „ . . .	— 60	2	2½	2	1
	¼ „ . . .	— 24	1	1½	1	0½
	⅙ „ . . .	— 12	—	6½	—	6
	⅓ „ . . .	— 8	—	3	—	2½
	⅕ „ . . .	— 4	—	1½	—	1½
	⅛ „ . . .	— 2	—	0½	—	0½
DANISH		Dler. Skg.				
GOLD	Double Frederick d'Or	} Vary- ing in price about	14	6¼	32	6
	Frederick d'Or		7	32	16	3
SILVER	Speciedaler . . .	2 —	4	5½	4	3
	Rigsdaler . . .	1 —	2	2½	2	1
	½ „ . . .	— 48	1	1½	1	0½
	¼ „ . . .	— 32	—	8½	—	8½
	⅙ „ . . .	— 16	—	4½	—	4
	⅓ „ . . .	— 8	—	2½	—	1½
	⅕ „ . . .	— 4	—	1	—	0½
	⅛ „ . . .	— 3	—	0½	—	0½
RUSSIAN		Rbls. Cpk.				
GOLD	Half-Imperial . . .	5 15	16	4½	16	3½
SILVER	Rouble . . .	1 —	3	2	3	1
	2 „ . . .	— 50	1	7	1	6½
	¼ „ . . .	— 25	—	9½	—	9
	⅙ „ . . .	— 20	—	7½	—	7½
	⅓ „ . . .	— 10	—	3½	—	3½
	⅕ „ . . .	— 5	—	1½	—	1½

		Full Nominal Value.	Full Value in Exchange.		Metallic Value, with due allowance for Mint Remedies and fair abrasion.	
GREEK		Drmai. Lepta.	s	d	s	d
GOLD	40 Drachmai piece . . .	40 —	28	4½	28	1½
	20 " . . .	20 —	14	2½	14	1
SILVER	5 Drachmai piece . . .	5 —	3	6½	3	4½
	1 " . . .	1 —	—	8½	—	8
	½ " . . .	— 50	—	4½	—	3½
	¼ " . . .	— 25	—	2½	—	1½
SPANISH		Dolls. Cts.				
GOLD	Isabella	5 —	20	7½	20	5
SILVER	Dollar	1 —	4	1½	3	11½
	Escudo	— 50	2	0½	2	—
	Peseta	— 20	—	10½	—	9½
	Half Peseta	— 10	—	5½	—	4½
	Real de Vellon	— 5	—	2½	—	2½
PORTUGUESE		Milreis Reïs.				
GOLD	Corõa	10 —	44	4½	44	1
	½ " 	5 —	22	2½	22	—
	¼ " 	2 —	8	10½	8	9
	⅙ " 	1 —	4	5½	4	4½
SILVER	½ Milreis	— 500	2	2½	1	11½
	¼ " 	— 200	—	10½	—	9
	⅙ " 	— 100	—	5½	—	4½
	⅓ " 	— 50	—	2½	—	2½
TURKISH		Pias. Paras.				
GOLD	Medjidié	100 —	18	0½	17	9
	½ " 	50 —	9	0½	8	10
SILVER	Medjidié	20 —	3	7½	3	5½
	½ " 	10 —	1	9½	1	7½
	¼ " 	5 —	—	10½	—	10
	⅙ " 	2 —	—	4½	—	3½
	⅓ " 	1 —	—	2½	—	1½

		Full Nominal Value.	Full Value in Exchange.		Metallic Value, with due allowance for Mint Remedies and fair abrasion.	
AMERICAN		Dolls. Cts.	s	d	s	d
GOLD	Double Eagle	20 —	82	2½	81	6
	Eagle	10 —	41	1	40	9
	½ "	5 —	20	6½	20	3
	¼ "	2 50	10	3¼	10	1
	⅛ "	1 —	4	1½	4	—
SILVER	Dollar	1 —	4	1½	4	1
	½ "	— 50	2	0½	1	10½
	¼ "	— 25	1	0½	—	11
	⅛ "	— 10	—	4½	—	4½
	⅙ "	— 5	—	2½	—	2
MEXICAN		Dolls. Cts.	s	d	s	d
GOLD	Doubloon	16 —	64	8	63	—
	½ " } Varying	8 —	32	4	31	6
	¼ " } in price.	4 —	16	2	15	6
	⅛ " } Gold	2 —	8	1	7	6½
	⅙ " } value.	1 —	4	0½	3	9
SILVER	Dollar	1 —	4	3½	4	1
	½ "	— 50	2	1½	2	0½
	¼ "	— 25	1	0½	1	—
	⅛ "	— 12½	—	6½	—	5½
	⅙ "	— 6½	—	3½	—	2½
	⅓ "	— 3½	—	1½	—	1½
NEW GRANADA		Dolls. Cts.	s	d	s	d
GOLD	Condor	10 —	40	3½	39	11
	½ " } Gold	5 —	20	1½	19	11
	¼ " } value.	2 —	8	0½	7	0½
SILVER	Peso	1 —	3	11½	3	10
	Peso Macuquina . . .	— 80	3	2	3	—
	½ Peso	— 20	—	9½	—	8½
PERUVIAN		Sols. Cts.	s	d	s	d
GOLD	20 Sols Piecos	20 —	79	3½	78	11½
	10 "	10 —	39	7½	39	5½
	5 "	5 —	19	9½	15	9½
	2 "	2 —	7	4½	7	10½
	1 Sol	1 —	3	11½	3	10½

	Full Nominal Value.	Full Value in Exchange.		Metallic Value with due allowance for Mint Remedies and fair abrasion.	
		Sols. Cts.	s d	s d	
SILVER Sol	1 —	3	11½	3	10
½ „	— 50	1	11½	1	11
¼ „	— 20	—	9½	—	9
CHILIAN					
	Pesos. Cts.				
GOLD Condor	10 —	37	5½	37	—
½ „	5 —	18	8½	18	4½
¼ „	2 —	7	5½	7	2
SILVER ½ Peso	— 50	1	9½	1	8
¼ „	— 20	—	7½	—	6½
⅒ „	— 10	—	3½	—	3½
URUGUAY					
	Pesos. Cts.				
GOLD 4 Patacon piece	5 —	16	1	15	9½
2 „	2 50	8	0½	7	10½
1 „	1 25	4	0½	3	11
SILVER 5 Real piece	— 50	1	10½	1	9½
2½ „	— 25	—	11½	—	10½
1½ „	— 122	—	5½	—	5½
BRAZILIAN					
	Milreis. Reis				
GOLD 20 Milreis	20 —	44	10½	44	6
10 „	10 —	22	5½	22	2½
SILVER 2 Milreis	2 —	4	5½	4	—
1 „	1 —	2	2½	1	11½
½ „	— 500	1	1½	—	11½
INDIAN					
	Rups. Ans.				
GOLD Mohur (varying in value) .	15 —	29	2½	28	6
SILVER Rupee	1 —	1	10½	1	9½
½ „	— 8	—	11½	—	10½
¼ „	— 4	—	5½	—	5
JAPANESE					
	Itziboos.				
GOLD Cobang	4 —	5	7	5	5
½ „ Niboo	2 —	2	9½	2	8
¼ „ Nishi	0½ —	—	8½	—	7½
SILVER Itziboo	1 —	1	5½	1	4½
Ishi or ¼ Itziboo	0½ —	—	4½	—	4

CHAPTER II.

SHIPMENTS AND ARBITRATIONS IN BULLION.

WE now propose to give a series of Invoices and Account Sales in connection with Shipments of Bullion between England and other Countries. They will serve to show, in the first place, how instruments of this kind are made out; and, in the second place, how the Practical Par of Exchange deviates in one direction or the other from the True Mint Par of Exchange. Whenever the Balance of Trade between two countries turns decidedly in favour of one of them against the other, shipments of Bullion from the latter to the former become necessary. So long as the Exchange of Commodities and other values remains on a pretty equal footing between two Countries, the supply of accounts of *indebtedness*, transferable from one to the other, by way of Bills of Exchange, furnishes the means of balancing their mutual liabilities. But if one country, by trade or otherwise, obtains more value from another country than it returns, it becomes the *Debtor* in want of Exchange, whilst the other country, the *Creditor*, has a *surplus* of Exchange. The balance between the two must then be settled by Bullion. Thus, according to Demand and Supply, a *rise* or *fall* in the Rates

of Exchange takes place, until the so-called *Bullion points* are reached, at which, under ordinary circumstances, a further rise or fall is checked, upon the settled limits of the respective value of Gold or Silver in the two countries.

Under extraordinary circumstances, in times of war or revolution, the Bullion points may be passed; but these are exceptional contingencies out of the regular course of Commerce.

In reference to the case of indebtedness of one Country to another, we have used the term "by trade or *otherwise*." This "*otherwise*" means that the indebtedness of one country to another may not always arise from the direct balance of trade between the two; but that it may be owing to the influence of the trade of one or several other countries, with either of the two.

Australia, for instance, is generally indebted to England by the direct trade between the two countries, and so are other Colonies, and many Foreign Countries, importing commodities from England; and the Exchanges with these are accordingly in favour of England. India and China, on the other hand, are generally England's creditors, for the same reason that they supply her with an excess of goods; and the Exchanges with these are accordingly unfavourable to England.

But, as regards France, the case happens frequently that, although the direct balance of trade is not against England, yet the Exchange is so, and that we have to ship Bullion to Paris. This arises, in the first place,

from the simple fact that England, through her immense commercial fleet, is the largest carrier of Bullion, which comes to her shores partly for her own account, and partly for account of other European Nations; and this makes the Exchange, as a rule, appear unfavorable to her.

It may, in the second place, arise from Banking and Exchange operations, in which French Capitalists are interested. At the present time, for instance, the French Bankers are large holders of English Bills, whilst English Bankers rarely hold French Bills. Operations on the Stock Exchange may also contribute to create an inequality in this respect. Thus, if a Foreign Loan is to be brought out in London, the parties interested will take care to buy up suitable Exchanges for remittance, which will thus influence the rates "otherwise" than by the direct balance of trade.

In these remarks we have touched upon a few only of the manifold and incessantly varying circumstances and influences bearing upon the question of Rates of Exchange, and the Theory of the Exchanges.

In the subjoined Invoices and Account Sales of Bullion shipped between England and other countries the full rates of freight and insurance are charged. For the manner of shipping and insuring Bullion we refer to Chapter on "Bullion Brokers and Shipping of Bullion." The results of such shipments are not always alike; but the examples chosen for illustration here have been selected with a view of giving the nearest possible average results.

GOLD SHIPMENTS.

FROM LONDON TO PARIS.

INVOICE OF TEN BARS FINE GOLD, BOUGHT OF THE BANK OF
ENGLAND, AND SOLD TO THE MINT IN PARIS.

	WEIGHT.	ASSAYS.	STANDARD, oz.
	Ozs. Dwts. Grns.		
1	192 3 12	B 1-3 $\frac{1}{8}$	208 16 12
2	191 7 0	„ 1-3 $\frac{1}{8}$	
3	184 15 12	„ 1-3 $\frac{1}{8}$	408 3 15
4	195 0 12	„ 1-3 $\frac{1}{8}$	
5	193 16 0	„ 1-3 $\frac{1}{8}$	
6	197 0 0	„ 1-3 $\frac{1}{8}$	
7	164 5 0	„ 1-3 $\frac{1}{8}$	816 2 15
8	190 1 12	„ 1-3 $\frac{1}{8}$	
9	189 17 0	„ 1-3 $\frac{1}{8}$	
10	156 2 0	„ 1-3 $\frac{1}{8}$	582 9 10
Standard oz.			2015 12 4
Standard oz. at 77s 10 $\frac{1}{2}$ d			£7848 5 6
Case and Packing			£0 7 0
Porterage			0 1 6
Freight 4s per cent.			15 14 0
Insurance $\frac{1}{10}$ th per cent.. . . .			7 17 0
			23 19 6
Cost in London.			£7872 5 0

ACCOUNT SALES IN PARIS.

No.	KILOS.	FINESS.	TARIFF RATES.	VALUE PER BAR.
			Fs.	Fs.
1	5·973·750	997·5	3,428·40	20,480·40
2	5·948·550	996·2	3,423·93	20,367·42
3	5·744·820	996·1	3,423·59	19,667·91
4	6·063·010	998·3	3,431·15	20,803·10
5	6·025·090	998·5	3,431·84	20,677·14
6	6·123·960	998·0	3,430·12	21,005·91
7	5·105·020	998·2	3,430·81	17,514·35
8	5·909·995	997·0	3,426·68	20,251·67
9	5·900·960	997·4	3,428·06	20,228·84
10	4·874·215	997·7	3,429·09	16,714·10
				197,710·84
Essais, frais de fonte et divers.				45·50
				Fs. 197,665·34

(The first nine Bars weigh less in the French Account Sales than the Invoice weight given in the English Invoice ; this is owing simply to the fact that the English Assay pieces of all the Bars have been melted with Bar No. 10, which is accordingly heavier in proportion, barring the slight loss incurred in the melting.

The Exchange resulting from this shipment is fs. 25·109 per £1 Sterling ; but, deducting ten days' interest at 3 per cent. for Mint Certificate, it is fs. 25·089.

Shipments of fine Gold from the Bank to France are made when the supply of Bars in the Market runs short, and when the Exchange is at 25·07½ to 25·12½ ; although some shippers always commence exporting Bank of England Gold when the Exchange is 25·10 to 25·15. Gold at 77s 9d, or 1½d per oz. cheaper than the selling price of the Bank is frequently obtainable in the Market (with a Brokerage

of $\frac{1}{8}$ th per cent., which brings the price up to 77s 10 $\frac{1}{2}$ d per oz.; the Brokerage, however, is often reduced to $\frac{1}{16}$ th per cent.); 77s 9 $\frac{1}{2}$ d to 77s 10d is paid occasionally for suitable parcels in the Market. Each $\frac{1}{4}$ d saved in the prime cost in London improves the rate of Exchange by $\frac{1}{3}$ rds of a Centime per £.

American Gold Coin, being 900 fine, sells at the Tariff rate in Paris.

INVOICE OF UNITED STATES GOLD COIN SENT FROM LONDON
TO PARIS.

2 Kegs containing each 11 Bags with 250 Double Eagles, together Dols. 110,000 weighing 5,908·425 ozs. at 76s 4d - - - -	£22,550 9 9
Brokerage $\frac{1}{8}$ th per cent. - - - -	£28 3 9
Packing, &c. - - - -	0 16 6
Freight and Insurance - - - -	67 13 0
	96 13 3
	£22,647 3 0

ACCOUNT SALES IN PARIS.

Double Eagles—Kilos 183·772·500 at Fs. 3,093·30 for 900 fine - - - - -	Fs. 568,463·47
Charges - - - - -	12·47
	Fs. 568,451·00

Giving an Exchange of Fs. 25·10.

The Refining of Gold Bullion in France being so much cheaper than in England (5 francs per Kilo. = 22 $\frac{1}{2}$ Millièmes, the cost in England being = 83 Millièmes), exporters seek to purchase Refinable Gold, and pay a correspondingly higher price for it, ranging from 77s 10 $\frac{1}{2}$ d to 78s per oz.

INVOICE OF 18 BARS REFINABLE GOLD SENT TO PARIS.

NO.	WEIGHT.	ASSAY.	STANDARD.	Pennyweights of Silver per 12 oza.	Pennyweights of Silver in the Bar, less 20 dwts. for each 12 oza.
	Ozs.	Carats	Ozs.		
1	251.000	W 2-2 $\frac{3}{8}$	221.408	44 $\frac{1}{2}$	512
2	252.300	„ 2-3 $\frac{1}{4}$	220.046	47	567
3	60.025	„ 3.1	51.158	50 $\frac{1}{2}$	152
4	71.775	„ 6-0 $\frac{1}{8}$	51.691	79 $\frac{1}{8}$	355
5	37.300	„ 4-1 $\frac{1}{8}$	30.042	61	127
6	37.275	„ 4-1 $\frac{1}{4}$	29.969	60 $\frac{1}{2}$	125
7	40.075	„ 3-3 $\frac{7}{8}$	32.847	58	126
8	40.350	„ 4.0	33.014	58	127
9	102.475	„ 3-1 $\frac{1}{8}$	87.192	51	264
10	106.975	„ 2-1 $\frac{1}{8}$	95.884	38 $\frac{1}{2}$	165
11	34.050	„ 4.3	26.699	64	124
12	54.275	„ 1-2 $\frac{7}{8}$	50.035	34 $\frac{1}{2}$	65
13	55.700	„ 3-0 $\frac{1}{8}$	48.026	48 $\frac{1}{2}$	132
14	56.575	„ 0-2 $\frac{1}{8}$	55.209	24 $\frac{1}{2}$	21
15	20.775	„ 1-1 $\frac{1}{8}$	19.565	32	20
16	26.375	„ 0-1 $\frac{3}{8}$	25.963	22	4
17	31.725	„ 3-0 $\frac{7}{8}$	27.084	51	82
18	88.150	„ 2.2	78.134	40	147
	1367.175		1183.966		3115

1,183.966 ozs. Standard at 78s - - - - £4,617 9 4
 3,115 dwts. Silver fine at 5s 6d per oz. - - - - 42 16 7

£4,660 5 11

Case and Packing - - - - £ 0 6 0
 Portorage - - - - - 0 3 6
 Freight and Insurance 3 per mille 13 19 6
 Brokerage $\frac{1}{8}$ th per cent. - - - 5 16 6

20 5 6

Cost in London - - - - £4,680 11 5

ACCOUNT SALES IN PARIS.

No.	Kilos.	Or	Argent.	Or Fin.	Argent Fin.
1	7-803-980	809	185	6-315-847	1-444
2	7-847-410	800	196	6-277-928	1-538
3	1-866-885	782	204	1-459-904	0-400
4	2-232-450	660	333	1-473-417	0-743
5	1-160-160	738	257	0-856-198	0-298
6	1-159-380	737	257	0-854-463	0-298
7	1-246-470	751	246	0-936-099	0-307
8	1-255-025	750	244	0-941-269	0-306
9	3-187-330	780	215	2-486-133	0-685
10	3-327-290	822	174	2-735-032	0-579
11	1-059-075	719	275	0-761-475	0-291
12	1-688-140	846	150	1-428-166	0-253
13	1-732-460	790	206	1-368-643	0-357
14	1-759-680	895	100	1-574-914	0-176
15	0-646-175	864	132	0-558-295	0-085
16	0-820-355	903	92	0-740-781	0-075
17	0-986-755	783	209	0-772-629	0-206
18	2-741-770	813	184	2-229-059	0-504
	42-523-790			33-770-252	8-545

à 3434-44

fs. 115,981-90

Argent fin 8-545

à fs. 218-89

fs. 1870-42

Prime 10 per millo . . . 18-70

1,889-12

fcs. 117,871-02

Affinage 5 fs. per kilo. . . . 212-62

18 Essais à 3-90 70-20

Frais divers 3-50

286-32

Net result fs. 117,584-70

This parcel has been valued at the Tarif du Commerce of

fs. 3434.44 per kilo. fine Gold without Premium, and fs. 218.89 per kilo. fine Silver, with 10 per mille Premium. The Shipment is presumed to be made between two regular correspondents, free of Melting Charges and Brokerage in Paris. The Exchange resulting is fs. 25.1218. These examples of Shipments of Gold from London to Paris show fair average results. Variations in price, conditions of Brokerage, &c., will necessarily affect these rates, and so will, of course, also discrepancies in the weight and Assays of the Bars, and differences in the Shipping and in the Insurance. At certain times, when Paris happens to be full of Gold, a discount on the *Tariff du Commerce* is demanded, at other times a premium may be made.

INVOICE OF 10,000 BRITISH SOVEREIGNS (NEW).

	£10,000	0	0
Case and Packing -	£	0	7 6
Cab - - - -		0	2 6
Freight and Insurance	30	0	0
		30	10 0
	£10,030	10	0
Sold in Paris weighing Kilos 79.837.800 at the			
Mint Tariff rate for 916 fine	Fs. 3,148.29	-	-
			Fs. 251,352.54
Charges - - - -			10.25
			<u>Fs. 251,342.29</u>
Giving an Exchange of	Fs. 25.06	per	£.

It is therefore, not profitable to send British Gold to Paris, even when the Coin turns out, as here found by French weight, to within $\frac{1}{2}$ per mille of the full legal British Mint weight.

FROM PARIS TO LONDON.

SHIPMENT OF GOLD BARS BOUGHT IN FRANCE, AT THE MARKET
PRICE OF FS. 3434·44 WITH 1 PER MILLE PREMIUM.

12 BARS GOLD.

No.	KILOS.	OR	KILOS. FIN.
1	6·315·770	998	6·303·138
2	9·012·395	995	8·967·333
3	5·779·520	996	5·756·402
4	11·157·690	995	11·101·902
5	4·990·665	998	4·980·684
6	4·987·035	992	4·947·139
7	13·006·620	988	12·850·540
8	8·853·445	993	8·791·471
9	10·227·375	975	9·971·691
10	6·478·880	992	6·427·049
11	5·931·430	996	8·966·335
12	3·070·915	996	
	89·811·740		89·063·684

à Fs. 3,434·44

Fs. 305,883·88

1 per cent. prime

305·88

Fs. 306,189·76

Caisse - - - - - Fs. 15·0

Porterage - - - - - 3·50

Transport and Assurance 918·0

Courtage, 1⁰/₁₀th per cent. 306·19

1,242·69

Fs. 307,432·45

These Bars, in order to be sold to the Bank of England, require re-melting, and each Bar must not exceed 200 oz. in weight. There are several among these weighing more than 6 kilos. In order to save Assays, the Melter is directed to melt No. 1 and Nos. 5, both 998 fine, together, and to cast the mass into two fresh Bars; to cast Nos. 2, 4, 8 and 9, into two Bars each; No. 7 into three Bars; Nos. 6 and 10 together into two;

Nos. 3, 11 and 12, into one Bar each. Thus 18 Bars are obtained, weighing 2885·375 oz., equal to 89·745·261 kilos (which shows a loss by melting of $66\frac{1}{4}$ grammes, or rather more than 2 ozs., 9 dwts. being recovered in the scrapings).

The English Assays, in two instances, yield $\frac{1}{8}$ th grain less.

ACCOUNT SALES IN ENGLAND.

	WEIGHT.	ASSAYS.	STANDARD.
	Ozs.		Ozs.
1	181·025	B $1\cdot3\frac{1}{4}$	
2	182·275	„ $1\cdot3\frac{1}{4}$	395·295
3	138·425	„ $1\cdot3\frac{1}{8}$	
4	151·250	„ $1\cdot3\frac{1}{8}$	313·952
5	185·750	„ $1\cdot3\frac{1}{2}$	
6	196·425	„ $1\cdot3\frac{1}{2}$	
7	162·150	„ $1\cdot3\frac{1}{2}$	590·716
8	183·200	„ $1\cdot3\frac{1}{2}$	
9	185·250	„ $1\cdot3\frac{1}{2}$	398·282
10	137·025	„ $1\cdot2\frac{1}{4}$	
11	142·425	„ $1\cdot2\frac{1}{4}$	
12	138·300	„ $1\cdot2\frac{1}{4}$	449·793
13	144·525	„ $1\cdot3\frac{1}{4}$	
14	139·850	„ $1\cdot3\frac{1}{4}$	307·803
15	162·425	„ $1\cdot1\frac{1}{2}$	172·576
16	165·825	„	176·425
17	190·550	„ $1\cdot3\frac{1}{2}$	
18	98·700	„ $1\cdot3\frac{1}{2}$	313·902
	2,885·375		3,118·744

	At 77s 9d per oz.	£12,124 2 8
Melting 2,885 ozs. at $\frac{1}{4}$ d -	£3 0 1	
Less Scrapings 9 dwts. at 4s -	1 16 0	
	£1 4 1	
18 Assays at 4s 6d -	4 1 0	
Porterage -	0 5 0	
		5 10 1
		£12,118 12 7

Giving an Exchange of Fs. 25·368 per £ Sterling.

In this case again, the same as in the preceding ones, the Premiums on Gold in Paris, and other incidental matters, may alter the rate.

NAPOLEONS FROM PARIS TO LONDON.

INVOICE OF 20 FRANCS PIECES (NEW) IN 10 BAGS OF 1,000
NAPOLEONS EACH.

						Fs. 200,000·0
Packing	-	-	-	-	-	Fs. 10·0
Porterage, &c.	-	-	-	-	-	8·0
Freight and Insurance	-	-	-	-	-	600·0
						<u>618·0</u>
						<u>Fs. 200,618·0</u>

Sold to the Bank of England, found to weigh :—

No.	Weight.		
	Ozs.	Dwts.	Grns.
1	207	6	0
2	207	7	0
3	207	6	12
4	207	7	0
5	207	6	12
6	207	6	0
7	207	6	12
8	207	6	0
9	207	6	12
10	207	7	0
	<u>2,073</u>	<u>5</u>	<u>0</u>

At 76s 2½d per oz.	-	-	£7,899 18 11
Cab and Porter	-	-	3 6
			<u>£7,899 15 5</u>

Giving an Exchange of Fs. 25·396 per £.

The shipment of Gold Bars to London is therefore cheaper than that of Napoleons, even when of the full weight here found.

Comparing the two sets of Shipments of fine Gold, we find that the one from London to Paris

gives an Exchange of fcs. 25·109,

the other from Paris to London

an Exchange of fcs. 25·368 ;

whilst the true Mint Par of Exchange between the two places (see page 301) is 25·2215 ; so that when the Exchange on France rises 11½ centimes below Par (the difference between 25·2215 and 25·109) Gold is sent from London to Paris, and when it gets cheaper, say 14½ centimes above Par (the difference between 25·2215 and 25·368), London receives Gold from Paris.

The fact that Gold is rather sent from London to Paris than *vice versa*, is attributable, in a measure, to the circumstance that Bullion is better valued in France than here, and also that the Bank of England's fixed purchasing price is 77s 9d per oz. Standard. This accounts for the 3¼ Centimes difference *against* England. Bearing in mind, however, that different shipments may turn out to yield different rates, we may set this consideration aside, and assume, as a general rule,

That when the French Exchange is at 25·10, it pays to send Gold from England to France ;

And, when the Exchange is at 25·35, it pays to send Gold from France to England.

The Mint Par being taken at 25·22½, we have thus a margin of 12½ Centimes, or ½ per cent. either way, and 25 Centimes, or 1 per cent., between the two extreme points.

The ½ per cent. either way being absorbed by charges of Brokerage, transporting, realisation and incidental costs, constitutes a natural bar to the more frequent interchange of shipments of Bullion between the two countries. Although, so soon as the Actual Par of Exchange with France changes from the Mint Par of 25·22½ to 25·20, or 25·17½, or 25·15, there is a tendency to take Gold from us, the Exchange then being what is called unfavourable to England ; yet to induce actual withdrawals of Gold from our shores to France requires that the Exchange with that country should fall to 25·10 or 25·12½. And, on the other hand, so long as the Exchange from Paris on London does not rise

higher above the Mint Par than $25\cdot27\frac{1}{2}$ or $25\cdot30$, it will not pay to send us Gold over here; but so soon as the Exchange rises to $25\cdot35$, we receive shipments of Gold Bullion from Paris. Meanwhile, before these so-called Bullion points are reached, the rates floating between them and the Mint Par are sustained by a corresponding influence on other Exchanges. England, for instance, whilst a Debtor to France, and unable to obtain a cheap direct Exchange in Paris, may be a Creditor of Holland, Italy, Spain, or other countries, with which France may be able to exchange advantageously. English Drafts on these places then go to France for remittance, and uphold the rate of Exchange either temporarily or until the balance of trade turns the other way. But if the supply of both French and other Foreign Bills falls short, the Bullion point is reached nevertheless.

The margin between the two Bullion points of 1 per cent. is sufficiently large to allow considerable play to the numerous contingencies connected with International Commerce and Credit, as dependent on Industry, Harvests, and Political and Social Events; and the balance oscillates pretty steadily between the two extreme points. Revolutions, Wars, or other startling Political Events alone will widely disturb the working of this balance beyond the natural limits.

People who are not versed in commercial and financial affairs, when they hear of the absolute sway of the rule of the Exchanges, cannot understand that the matter is governed by a natural law, to which the Banker has to submit just the same as everybody else.

GOLD FROM NEW YORK TO LONDON.

The following is a shipment of fine Gold Bars, melted, assayed, and stamped by the United States Assay Office. These Bars form a convenient remittance. In the Account Sales in England it may be noticed that the Assays show slight differences; thus the first Bar, invoiced at $995\frac{1}{2}$, is returned of the same Betterness as the Bars of 997, namely B $7\frac{5}{8}$ grains, which in Millièmes is only 996·09, whilst two Bars of 997 are returned as B $7\frac{3}{4}$ or 997·40.

The Bars are sold at 77s 9d (not to the Bank) with $\frac{1}{4}$ per cent. Brokerage; but then the cost of re-melting has been saved.

**INVOICE OF ONE KEG FINE GOLD BARS FROM NEW YORK
TO LONDON.**

Nos.	Ozs.	FINE.	STAMPED VALUE.
			Dols.
1	249·74	995½	5,139·35
2	48·31	996	994·66
3	48·21	996	992·60
4	43·72	996	900·15
5	39·94	996	822·31
6	239·58	997	4,937·70
7	238·18	997	4,908·85
8	132·52	997	2,731·21
9	75·78	997	1,561·81
10	76·85	997	1,583·86
11	70·78	997	1,458·77
12	71·41	997	1,471·75
13	73·79	997	1,520·80
14	72·85	997	1,501·42
15	67·92	997	1,399·82
16	73·06	997	1,505·75
17	68·93	997	1,420·63
18	57·46	997	1,184·24
19	52·93	997	1,090·88
20	52·17	997	1,075·21
21	54·38	997	1,120·76
22	50·45	997	1,039·77
23	51·04	997	1,051·92
24	54·75	997	1,128·39
25	47·60	997	981·03
	2,112·35		43,523·64

Keg and Packing for Shipment -
Drayage to Steamer

Dols. 2·50
1·75

4·25

Dols. 43,527·89

ACCOUNT SALES ONE KEG FINE GOLD BARS IN LONDON.

Nos.	Ozs.	ASSAY.	Ozs. STANDARD.
		Grs.	
1	249·725	B. $7\frac{5}{8}$	—
2	48·300	„ $7\frac{5}{8}$	—
3	48·200	„ $7\frac{5}{8}$	—
4	43·725	„ $7\frac{5}{8}$	—
5	39·950	„ $7\frac{5}{8}$	—
6	239·575	„ $7\frac{5}{8}$	—
7	238·175	„ $7\frac{5}{8}$	—
8	132·500	„ $7\frac{5}{8}$	—
9	75·775	„ $7\frac{5}{8}$	—
10	76·850	„ $7\frac{5}{8}$	—
11	70·775	„ $7\frac{5}{8}$	—
12	71·400	„ $7\frac{5}{8}$	—
13	73·775	„ $7\frac{5}{8}$	1,530·788
14	72·850	„ $7\frac{5}{8}$	—
15	67·900	„ $7\frac{5}{8}$	—
16	73·050	„ $7\frac{5}{8}$	—
17	68·925	„ $7\frac{5}{8}$	—
18	57·450	„ $7\frac{5}{8}$	369·650
19	52·925	„ $7\frac{3}{4}$	57·586
20	52·175	„ $7\frac{5}{8}$	56·696
21	54·375	„ $7\frac{3}{4}$	59·164
22	50·450	„ $7\frac{5}{8}$	—
23	51·025	„ $7\frac{5}{8}$	—
24	54·750	„ $7\frac{5}{8}$	—
25	47·600	„ $7\frac{5}{8}$	221·486
	2,112·200		2,295·370

At 77s 9d per oz. £8923 5 0

CHARGES.

Freight $\frac{1}{4}$ th per cent.	£11 3 1	
Insurance 5s 3d per cent. (New York to London)	23 8 6	
Charges in Liverpool and Freight to London	1 10 0	
Bags and Delivery	0 2 6	
Brokerage $\frac{1}{8}$ th per cent.	11 3 1	
		47 7 2
		£8875 17 10

PROCEEDS.

Giving an Exchange of 48·939 Pence per Dollar, or $110\frac{1}{2}$ in New York.

Reversing this Shipment as made from London to New York, under the same conditions as to price (corresponding to 77s $10\frac{1}{2}$ d in London),

The cost here would be - - - - -	£8923 5 0
Add charges - - - - -	47 17 10
	£8971 2 10

Shipped to New York the Bars (unless United States Bars) require re-melting, which would cost 6 cents. per 100 Dollars; allowing also for a small loss of weight.

The Bars would realise - - - - -	Dols. 43527·89
Less melting and loss of weight - - - - -	40·00
	Dols. 43487·89

Which would give an Exchange of 49·509 Pence per Dollar, or in New York, 109.

The next is an Invoice of United States Eagles, new from the Mint in Philadelphia, sent from New York to London, sold in London at 76s 4d (free of Brokerage). The Bank Price is 76s $2\frac{1}{2}$ d.

GOLD SHIPMENTS.

399

INVOICE OF TWO KEGS CONTAINING 110,000 DOLS. UNITED STATES
GOLD COIN.

No. 38.	1 Keg containing U. S. Double Eagles	Dols.	55,000·00
„ 39.	1 Keg containing U. S. Double Eagles		55,000·00
		Dols.	110,000·00
	Kegs - - - -	Dols.	3·00
	Drayage, &c. - -		1·75
			4·75
		Dols.	110,004·75

ACCOUNT SALES OF SAME IN LONDON.

Dols.	Ozs.	Dols.	Ozs.
5,000	268·550	5,000	268·600
5,000	268·550	5,000	268·575
5,000	268·575	5,000	268·675
5,000	268·550	5,000	268·550
5,000	268·550	5,000	268·525
5,000	268·525	5,000	268·550
5,000	268·525	5,000	268·575
5,000	268·600	5,000	268·525
5,000	268·650	5,000	268·550
5,000	268·600	5,000	268·550
5,000	268·550	5,000	268·525
	2,954·225		2,954·200

5,908·425 ozs. at 76s 4d (Bank price is 76s 2 $\frac{3}{4}$ d)	£22,550	9	9
Freight New York to Liverpool			
$\frac{1}{8}$ th per cent. - - - -	£28	3	9
Insurance New York to London			
5s 3d per cent. - - - -	59	3	10
Charges in, and from Liverpool -	3	4	4
Bags and delivery - - - -	0	6	6
Brokerage (None) - - - -	0	0	0
		90	18 5

Proceeds - - £22,459 11 4

Giving an Exchange of 49 Pence per Dollar, and in New York 110 $\frac{1}{2}$.

The Bank of England will sometimes have a stock of Eagles on hand, for sale at 76s 6½d per oz.; or Eagles may be in the Market at 76s 3d or 76s 5d, which latter rate, with Brokerage, comes to about the same price. It is advisable, if possible, to avoid buying Coins quite new from the Mint. Selecting an average parcel, we ship to New York as per Invoice subjoined.

INVOICE OF EAGLES FROM LONDON TO NEW YORK.

1 Case, containing 10 Bags United States Gold	
Coin, weighing, Dols. 5000 each, oz. 2684·750	
at 76s 6½d - - - - -	£10,274 15 3
Case and packing - - - - -	0 17 6
Charges to Liverpool - - - - -	1 12 9
Insurance 5s 6d per cent. - - - - -	28 4 3
	30 14 6
	£10,305 9 9
Realising in New York Gold Coin - - - - -	Dls. 50,000·00
Less freight ¼th per cent. - - - - -	Dls. 62·50
Charges - - - - -	3·00
	65·50
	Dls. 49,934·50

Giving an Exchange of 49·531 per Dollar, or 109 in New York.

The Par of Exchange between New York and London is 109½.*

Shipments of Gold from New York to London therefore can be made when the Exchange for Bills on London at sight is 110; and when it stands at 109 Gold can be sent from London to New York, which again proves the rule as stated before.†

* See Page 347.

† It must be borne in mind that the London Exchange here taken is the sight Exchange, whilst that quoted in New York is meant for the so-called 60 days' Exchange on London, to which London interest must be added for short.

GOLD FROM CALIFORNIA.

The Californian Gold is generally Refinable Gold, and in San Francisco a premium of $\frac{1}{8}$ to $\frac{3}{8}$ per cent. is paid on that account. In the Invoice here given the premium is $\frac{3}{8}$ per cent., but, per contra, the Silver is given in.

In London the Silver is accounted for, and a higher price is paid for the Gold; in this case 77s 10 $\frac{1}{2}$ d.

INVOICE OF EIGHTEEN GOLD BARS SHIPPED FROM SAN FRANCISCO TO LONDON.

GOLD BAR.	FINE.	WEIGHT.	VALUE.
		Ozs.	Dols.
1	808	251·00	4,192·40
2	798	252·31	4,162·13
3	780	60·03	967·92
4	659	71·85	978·79
5	738	37·30	569·04
6	736	37·29	567·34
7	750	40·08	621·39
8	749	40·37	625·05
9	780	102·55	1,653·51
10	823	107·00	1,820·38
11	718	34·00	504·64
12	843	54·28	945·90
13	789	55·72	908·79
14	892	56·57	1,043·11
15	862	20·79	370·45
16	903	26·36	492·05
17	782	31·74	513·08
18	813 $\frac{1}{4}$	88·19	1,483·04
		1,367·43	22,419·01

Premium $\frac{3}{8}$ per cent. - - - - Dols. 134·52

CHARGES :—

Freight to Panama $\frac{7}{8}$ percent. Dols. 196·17

Primage - - - - 9·80

Cartage - - - - 0·75

Bills of Lading Stamps - 0·50

Dols. 22,553·53

207·22

Dols. 22,760·75

The Account Sales in London of this Invoice will be found at page 182.

The same realised	-	-	-	-	-	-	£4,643	9	7
Which, deducting Freight from Panama $\frac{1}{8}$ per cent.							40	14	1
Gave nett proceeds	-	-	-	-	-	-	£4,602	15	6

Or an Exchange of 48·534 Pence per Dollar.

We have thus given examples of Gold Shipments between England, on the one hand, and France and the United States, on the other. With the exception of Australia, these are the principal parts dealing in Gold with England. Shipments of Imperials from or to Russia have almost ceased, and with other countries England deals principally in her own Gold Coins.

RUSSIAN HALF IMPERIALS FROM ST. PETERSBURG.

7,174 Half Imperials	-	-	-	-	-	Rbbs.	36,946	10
Shipping Charges and Insurance	-	-	-				45	00
						Rbbs.	36,991	10
Weighing in London—								
1,508·3 ozs. at Bank price 77s 7 $\frac{1}{2}$ d	-	-				£5,853	17	8
Landing Charges, Freight, &c.	-	-	-				15	2 0
						£5,838	15	8

Giving an Exchange of 37 $\frac{1}{8}$ Pence per Rouble.

SILVER SHIPMENTS.

Silver is shipped for the Continent whenever there is no demand here for India. At 60 $\frac{1}{4}$ to 60 $\frac{1}{2}$ Pence per ounce it pays to be sent to Hamburg, Amsterdam, France, &c., according to the state of the Exchanges. But when the demand for India arises, and the stock in the market here is exhausted, the stores of Silver on the Continent supply what is required, and Silver returns to England at prices varying from 61 to 62 $\frac{1}{4}$ Pence.

SILVER BARS TO HAMBURG.

By GENERAL STEAM NAVIGATION BOATS.

Nos.	WEIGHT.	ASSAY.	STANDARD.
	Ozs.		Ozs.
1	1,027.50	B 16 $\frac{1}{2}$	—
2	1,104.00	„ 16 $\frac{1}{2}$	—
3	1,116.50	„ 16 $\frac{1}{2}$	—
4	1,059.00	„ 16 $\frac{1}{2}$	4,627.115
5	1,024.00	„ 17	—
6	1,203.00	„ 17	—
7	1,012.50	„ 17	—
8	1,003.50	„ 17	—
9	998.00	„ 17	5,642.338
10	1,091.00	„ 17 $\frac{1}{2}$	—
11	1,094.00	„ 17 $\frac{1}{2}$	—
12	981.50	„ 17 $\frac{1}{2}$	—
13	873.50	„ 17 $\frac{1}{2}$	—
14	1,060.00	„ 17 $\frac{1}{2}$	—
15	992.00	„ 17 $\frac{1}{2}$	—
16	1,051.00	„ 17 $\frac{1}{2}$	—
17	1,102.00	„ 17 $\frac{1}{2}$	—
18	965.50	„ 17 $\frac{1}{2}$	—
19	964.00	„ 17 $\frac{1}{2}$	—
20	837.00	„ 17 $\frac{1}{2}$	—
21	959.50	„ 17 $\frac{1}{2}$	—
22	731.50	„ 17 $\frac{1}{2}$	13,703.867
23	1,069.50	„ 17	—
24	1,026.00	„ 17	—
25	951.00	„ 17	—
26	1,001.50	„ 17	—
27	1,117.50	„ 17	5,561.056
28	872.50	„ 16 $\frac{1}{2}$	937.348
29	936.00	„ 17 $\frac{1}{2}$	—
30	923.50	„ 17 $\frac{1}{2}$	—
31	1,045.00	„ 17 $\frac{1}{2}$	—
32	1,012.50	„ 17 $\frac{1}{2}$	—
33	923.00	„ 17 $\frac{1}{2}$	—
34	907.50	„ 17 $\frac{1}{2}$	—
35	1,012.00	„ 17 $\frac{1}{2}$	—
36	1,120.00	„ 17 $\frac{1}{2}$	—
37	879.50	„ 17 $\frac{1}{2}$	9,449.462
			39,921.186

Ounces Standard 39,921·186, at 60½d per oz. . .	£10,021 17 8
Brokerage, ¼ per cent.	£12 10 6
Packing and Cases	1 17 6
Cartage, Lighterage, Custom House Charges 2 3 4	
Insurance	10 0 0
	<u>26 11 4</u>
	<u>£10,048 9 0</u>

ACCOUNT SALES IN HAMBURG.

	Cologne Marks	Loth	Fineness	Cologne Marks fine	Loth
5 Bars weighing	709	3½	994	704	15½
6 " "	851	11½	995	847	7½
22 " "	2,846	10½	996	2,835	4
4 " "	521	5½	997	519	12½
				<u>4,907</u>	<u>7½</u>
	Total Marks fine . . .				
	At Bco. Mk. 27¼ = Bco. Mk. 136,182·25				
Assays and Charges	32·8				
Freight ⅓ per cent. on £5,000	} 126·7 158·15				
" ⅙ on Balance					
	<u>136024·10</u>				

Giving an Exchange of £1 = 13·536 Bco. Mks.
or 13·8½

This is exclusive of Bank Commission.

The Assays in Hamburg, it will be noticed, are rather below the English Assays.

BAR SILVER FROM HAMBURG TO LONDON.

			Loth	Grs.
4 Bars 992 fine, making . . .	Mks. fine	515	0	10
19 " 993 " " . . .	"	2,448	12	5
1 " 994 " " . . .	"	133	3	2
7 " 997 " " . . .	"	925	7	17
4 " 999 " " . . .	"	513	15	5
35 Bars	Mks. fine	<u>4536</u>	<u>7</u>	<u>3</u>
At Bco. Mks. 27¼ . . .	Bco. Mks.	125,886	6	
Shipping Charges . . .	"	37	6	
	Bco. Mks.	<u>125,923</u>	<u>12</u>	

ACCOUNT SALES IN LONDON.

2 Bars . . .	B 15½ . . .	Standard oz. 2147·12			
13 „ . . .	„ 16 . . .	„	13603·50		
9 „ . . .	„ 16½ . . .	„	9401·94		
11 „ . . .	„ 17½ . . .	„	11699·35		
35 Bars		Standard oz. 36851·91			
			at 62d per oz.	£9,520	1 6
Assays			£2	12	6
Freight			8	18	0
Insurance			9	10	0
Landing Charges and Cartage			2	1	0
				23	1 6
(Brokerage paid by the Buyer.)				£9,497	0 0
Giving an Exchange of		Mrks. Bco. 13·260			
		or £1 = 13·4½s.			

As Silver is both bought and sold in Hamburg at a fixed price, these Shipments have an immediate effect upon the Exchange, which at Par stands at 13 Mk. 7½s. When Shipments come from London, which must be paid for either by remittances of Bills on England from Hamburg, or by Drafts in London upon Hamburg, the former paper is in demand, and rises in value to 13 Mk. 8s. or 13 Mk. 9s., as the case may be, whilst the latter becomes abundant in London, and the seller of it here must give more Banco Marks than before per £1 in the same proportion. On the other hand, when Silver is withdrawn from Hamburg, Bills on London become cheap there, and Bills on Hamburg in London are dearer.

The price of London Bills in Hamburg consequently gives the price of Silver from there when wanted for India.

By the following rule a factor can be established, showing the price of Standard Silver according to the Hamburg Exchange :

How much are = 480 grains Standard ?

If Standard 240 = 222 fine.

If grains 3608 = 1 Cologne Mark fine.

If Cologne Mark 1 = 27·75 Marks Banco.

If Exchange Marks Banco—? = 240 Pence, or £1.

The factor resulting is : 819579,

which divided by the Hamburg short Exchange will give the price of Silver, as by the following Table :

Short Exchange at	Price per oz. Standard.	From Hamburg In Fractions to $\frac{1}{4}$ d.	To Hamburg In Fractions to $\frac{1}{4}$ d
13·4	61·855	Shipped to England add Banking Commission $\frac{1}{4}$ o/o, Brokerage $\frac{1}{4}$ o/o, Shipping Charges $\frac{1}{4}$ o/o ; deduct for lower Assays in Hamburg $\frac{1}{4}$ o/o, leaving $\frac{3}{4}$ o/o or $\frac{1}{4}$ d to be added to the price.	62 $\frac{1}{4}$
13·4 $\frac{1}{2}$	61·709		62
13·5	61·564		61 $\frac{7}{8}$
13·5 $\frac{1}{2}$	61·421		61 $\frac{5}{8}$
13·6	61·277		61 $\frac{1}{2}$
13·6 $\frac{1}{2}$	61·134		61 $\frac{1}{8}$
13·7	60·992		61 $\frac{1}{4}$
13·7 $\frac{1}{2}$	60·850		61 $\frac{1}{8}$
13·8	60·709		—
13·8 $\frac{1}{2}$	60·569		—
13·9	60·430		—
13·9 $\frac{1}{2}$	60·290		—
		Shipped to Hamburg deduct the same charges viz. $\frac{1}{4}$ o/o, but also $\frac{1}{4}$ for worse Assays in Hamburg; in all $\frac{1}{4}$ d per oz.	—
			60 $\frac{1}{8}$
			60 $\frac{1}{4}$
			60 $\frac{1}{8}$
			60 $\frac{1}{4}$
			59 $\frac{7}{8}$

So that, the Exchange being at 13·7 $\frac{1}{2}$, Silver will cost 61 $\frac{1}{8}$ d when shipped here from Hamburg, and when shipped from London thence it must be bought here at 60 $\frac{1}{8}$ d, in order to balance the account.

Amsterdam is another important market for Silver, the price of which varies at from 104 to 106 Florins per kilogramme fine, according to the supply coming in from or the demand for England.

BAR SILVER TO AMSTERDAM.

	Weight.	Assay.	Standard.
16 Bars -	16705·0	B 17 $\frac{1}{4}$	18021·81
17 „ -	17582·5	„ 17	18928·85
8 „ -	3165·5	„ 16 $\frac{1}{4}$	3400·76
36	37453·0	Standard oz.	40351·42
At 60 $\frac{1}{4}$ d per oz.	-	£10,129 17 9	
Packing, &c.	- £1 16 0		
Shipping Charges	0 18 0		
Brokerage	- 12 15 6		
Insurance	- 10 0 0		
		25 9 6	
		£10,155 7 3	

ACCOUNT SALES IN AMSTERDAM.

Kilos.		Kilos fine.	
45·182	- B 998	-	45·092
34·569	- „ 997	-	34·465
26·895	- „ 996	-	26·787
9·846	- „ 995	-	9·797
116·492		116·141	
	At 104·65	-	Fl. 121,541·55
Less Freight, Landing			
Charges	-	-	Fl. 118·50
Assays, &c.	-	-	38·50
			157·00
			Fl. 121,384·55

Giving an Exchange of Fl. 11·95.

The same shipment, returned from Amsterdam at 106 Florins per kilo fine, and sold here at 62d per oz. Standard, would cost :

Kilos fine 116·141 at 106	-	Fl. 123,109·46
Charges, Insurance, &c.	-	140·00
		Fl. 123,249·46
In London, oz. Standard 40351·42 at 62d	-	- £10,424 2 4
Freight and Landing Charges	-	£10 5 6
Assays	-	2 14 0
		12 19 6
		£10,411 2 10

Giving an Exchange of Fl. 11·84 per £.

The variations in the Exchange are not so decisive in this case, because the price of Silver in Amsterdam is not fixed, as it is in Hamburg, but fluctuates according to supply and demand.

SILVER TO INDIA *via* SOUTHAMPTON.

INVOICE OF 52 BOXES CONTAINING 52 BARS OF SILVER BULLION,

Shipped per P. & O. Company's Steamer from Southampton to Calcutta.

No. of Bars.	Ozs.	Assay.	Ozs.
1	1,002	B 17	1,078.72
2	986	" 17½	1,063.72
3	992.5	" 17	—
4	929	" 17	—
5	933.5	" 17	3,073.62
6	933	" 17½	1,006.54
7	936.5	" 17	—
8	966.5	" 17	—
9	963.5	" 17	—
10	931.5	" 17	—
11	935	" 17	5,098.66
12	949.5	" 16½	1,020.06
13	956	" 17	1,029.19
14	970.5	" 17½	1,047
15	972.5	" 17	—
16	970	" 17	2,091.24
17	973	" 17½	1,049.69
18	955	" 17	—
19	988.5	" 17	—
20	987	" 17	3,154.90
21	991	" 17½	1,069.11
22	981	" 17	—
23	986	" 17	—
24	990.5	" 17	—
25	953	" 17	4,209.95
26	971.5	" 17½	—
27	972.5	" 17½	2,097.23
28	1,017.5	" 17	—
29	986	" 17	2,156.91
30	994	" 16½	1,067.87
31	980	" 17	1,055.05
32	1,010.5	" 17½	1,090.14
33	1,005	" 17	1,081.95
34	1,031	" 17½	—
35	982	" 17½	—
36	1,025	" 17½	—
37	1,054	" 17½	—
38	1,006.5	" 17½	—
39	1,043.5	" 17½	—
40	1,013	" 17½	—
41	1,016	" 17½	—
42	988.5	" 17½	—
43	1,040.5	" 17½	—
44	1,024	" 17½	—
45	1,023.5	" 17½	—
46	1,042	" 17½	—
47	1,015.5	" 17½	—
48	1,006.5	" 17½	—
49	1,014	" 17½	—
50	1,014	" 17½	—
51	709.5	" 17½	—
52	1,135	" 17½	20,696.25
	51,258.5		55,237.80

SILVER SHIPMENTS.

409

55,237·80 ounces, at 5s 1½d per ounce . . . £14,097 2 10

CHARGES.

Freight at 2 per cent. on £14,000 £280 0 0

Fifty-two Boxes, Packing, Cartage,

Bills of Lading, &c. 11 19 6

Brokerage ½ per cent. 17 12 5

309 11 11

Insurance Premium on £15,600 at

7s 6d per cent. 58 10 0

Duty 1 19 0

60 9 0

£14,467 3 9

This shipment is sold to the Calcutta Mint, the Bars requiring re-melting.

STATEMENT OF OUT-TURN.

Mark and Number.	Bar Silver.	Weight before Melting.	Weight after Melting.	Assay.	Amount.			
SW 1/52	Ozs. 51256·5	136664·2	13120·1	997	Rs.	An. P.		
			13479·9	„	13970	3 8		
			13558·1	998	14353	5 6		
			13861·8	„	14451	1 5		
			16041·0	„	14774	12 8		
			12042·5	996	17097	8 5		
			13108·7	„	12809	15 2		
			12958·8	„	13944	1 5		
			12810·0	„	13784	10 3		
			10469·4	„	13626	5 7		
			5184·1	994	11136	9 6		
					5503	6 5		

Two days after being received at the Mint a Mint Certificate is given, which is paid four days afterwards.

OUT-TURN of 52 Boxes Bar Silver ex Peninsular and Oriental Steam Navigation Company's Steamer from Southampton, received from London.

SW	52 Boxes Bar Silver, containing oz. 51256·5,	
1/52	or Tolas 136664·2, sent to Calcutta Mint,	
	proceeds of Out-turn as per annexed state-	
	ment, equal to about Rs. 106·442 per 100	
	Tolas - - - - -	Rs. 145,468 5 9

CHARGES.

Landing and Conveying to Mint, &c.	-	22 14 0
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Rs. 145,445 7 9

Thus giving an Exchange of 1s 11½d per Rupee.

INVOICE OF SILVER BARS

Sent to Calcutta by Peninsular and Oriental Steam Navigation Co.

190 boxes containing 190 Bars fine Silver,

Of which 133 B 17½

„ 44 „ 17

„ 6 „ 16½

„ 5 „ 16

„ 2 „ 15½

Weighing together

183,384·5 oz. = 197,674·06 Standard oz.

At 61¼d per oz. £50,448 1 3

CHARGES.

Freight, 2 per cent. on £50,400	. £1008 0 0
---------------------------------	-------------

190 Boxes, Packing, &c.	. 42 18 6
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Brokerage, ½ per cent.	. 63 1 3
------------------------	----------

1,113 19 9

Insurance 12s 6d, and duty	. 370 10 0
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£51,932 11 0

This shipment is sold in the Bazaar in Calcutta without re-melting the Bars. The Merchants buy the same according to the fineness found.

OUT-TURN OF 190 BOXES BAR SILVER,

Sent per Peninsular and Oriental Steamer of 20th January 1861,
from Southampton to Calcutta, sold in the Bazaar.

PARTICULARS.					AMOUNT.		
Weighing as per Invoice,					Per 100 Tolas.		
	Dwts.	Ozs.	Tolas.	Rs.	Rs.	A.	P.
62 Bars 17½ B.	59,310	or	158,160	at 106/1	167,748	7	4
75 „ 17¼ „	70,596	„	188,256	„ 106/	199,551	5	10
20 „ 17 „	19,624·5	„	52,332	„ 105/15	55,439	3	5
22 „ 17 „	22,574	„	60,197·05·4	„ 105/14	63,733	14	10
1 „ 16½ „	1,038	„	2,768	„ 105/13	2,928	14	3
3 „ 16½ „	3,016	„	8,042·10·8	„ 105/12	8,505	2	0
1 „ 16 „	1,077	„	2,872	„ 105/11	3,035	5	6
4 „ 16 „	4,149	„	11,064	„ 105/10	11,686	5	7
1 „ 15½ „	1,055·5	„	2,814·10·8	„ 105/9	2,971	3	9
1 „ 15½ „	944·5	„	2,518·10·8	„ 105/8	2,657	3	1
190 Bars in all, 183384·5 oz.					489,025·05·4 Tls.	Rs. 518,257	1 7

CHARGES TO DEDUCT.

Break hire (carriage)	Rs. 60	0	0
Landing, &c.	51	14	9
			111 14 9
Total	Rs. 518,145	2	10

Giving an Exchange of 2s 0·055d per Rupee.

A convenient rule can be established to calculate the average out-turn of Bar Silver in India upon the price per oz. Standard here.			
Freight and Insurance and Petty Charges	-	-	*2·75 per cent.
Seignorage at Calcutta	-	-	2·00
Melting Charge	-	-	0·10
Average Loss on Melting*	-	-	0·5
			2·15 per cent.
			4·90 „

* The Insurance is occasionally a little higher, the loss on melting less or more up to 1 per mille, but on the whole the figures given represent the average experience.

Indian Standard is - - 220

British Standard is - - 222

So the former is $\frac{1}{11}$ th part, or 9 per mille cheaper
than British Standard—

Deduct this - - - - 0·90

Leaves - - - - 4·00 per cent.

to be added to the price per oz. Standard here, as the price per oz. Indian Standard laid down in the Calcutta Mint, and as the Tola or Rupee weighs 180 grains or $\frac{3}{8}$ of an ounce; this fraction gives the Exchange of Rupees.

Thus Standard oz. in England - 61·250 Pence

Add 4 per cent. - - - 2·450

63·700

Multiply by $\frac{8}{3} = 1s\ 11\frac{7}{8}d.$

Silver at	Exchange at Calcutta
60 Pence per oz. here gives	Pence per Rupee.
60	23·400
$60\frac{1}{8}$ " " "	23·448
$60\frac{1}{4}$ " " "	23·497
$60\frac{3}{8}$ " " "	23·546
$60\frac{1}{2}$ " " "	23·595
$60\frac{5}{8}$ " " "	23·644
$60\frac{3}{4}$ " " "	23·692
$60\frac{7}{8}$ " " "	23·741
61 " " "	23·790
$61\frac{1}{8}$ " " "	23·839
$61\frac{1}{4}$ " " "	23·888
$61\frac{3}{8}$ " " "	23·936
$61\frac{1}{2}$ " " "	23·985
$61\frac{5}{8}$ " " "	24·033
$61\frac{3}{4}$ " " "	24·082
$61\frac{7}{8}$ " " "	24·131
62 " " "	24·180
$62\frac{1}{8}$ " " "	24·229
$62\frac{1}{4}$ " " "	24·278
$62\frac{3}{8}$ " " "	24·327
$62\frac{1}{2}$ " " "	24·375

Shipments of Silver are frequently made from Paris and Marseilles to India and the East for account of English Indian Banks or Merchants. The shipping from the Port of Marseilles saves time, and to the Exchange with France this method of supplying Silver to the East is sometimes more profitable than shipments *via* Southampton. The freights from Marseilles are—

To India $1\frac{1}{2}$ o/o; to Singapore and Hong Kong $1\frac{3}{4}$ o/o; to Batavia and Shanghai 2 o/o; to Japan $2\frac{1}{2}$ o/o;—(from Southampton the freight to India is 2 o/o.)

INVOICE OF SILVER BARS FROM MARSEILLES TO CALCUTTA.

Nos.	Kilos.				
1	21·168				
2	21·810				
3	22·118				
4	21·580				
5	21·135				
6	21·040				
7	20·230				
8	21·245				
9	21·180				
10	19·312	210·818	Assay. 998	Tariff rate per Kilo. at Fs. 218·45	Fs. 46,053·20
11	21·160				
12	20·983				
13	21·245				
14	20·925				
15	22·272				
16	22·060	128·645	997	at Fs. 218·23	28,074·20
					<u>74,127·40</u>
		Premium 24 per mille -	-	-	-
					<u>1,779·05</u>
					Fs. 75,906·45
Cases, &c.	-	-	-	Fs. 24·00	
Shipping charges	-	-	-	<u>12·55</u>	
					<u>36·55</u>
					<u>Fs. 75,943·00</u>

(Freight of $1\frac{1}{2}$ o/o is also paid at Marseilles.)

Taking the Exchange at 25·15, the cost of the Shipment in England is £3019 12s 3d; whilst

$$\begin{array}{rcl} \text{Kilos 210·818} & 998 \text{ fine, and} & \\ \text{,, 128·645} & 997 \text{ ,,} & \end{array} \left. \vphantom{\begin{array}{rcl} \text{Kilos 210·818} & 998 \text{ fine, and} & \\ \text{,, 128·645} & 997 \text{ ,,} & \end{array}} \right\} \text{ or 338·656 Kilos fine}$$

are equal to Kilos 366·114 of 925 British Standard fine, or at the customary rate of 31·100 grammes per oz. = 11,772·122 oz., so that the price per ounce Standard is equal to 61·56 Pence.

The factors to be considered in this case are, the Premium on the Silver to be paid in France upon the Tarif du Commerce price of fs. 218·89 per Kilo. 1,000 fine, which amounts here to 24 per mille, or $2\frac{1}{2}$ per cent., and the rate of Exchange between England and France.

How many Pence = 1 ounce Standard.

If Standard oz. 240 = 222 fine.

$$1 = 31·10 \text{ grammes.}$$

Grammes 1,000 = 218·89 fs., with Premium to be added after.

Exchange per ? = 240 pence.

Giving a factor of 151126

to be divided by the Exchange, and the premium per mille to be added to the dividend; thus at

$$\begin{array}{rcl} & 25·15)151126(60·09 & \\ \text{add 20 per mille Premium .} & . & 1·20 \\ & \hline & 61·29 & \\ & \text{or } 61\frac{1}{8} \text{ Pence.} & \end{array}$$

Upon this plan a convenient table of equivalents for reference may be constructed, as shown on next page.

SHORT EXCHANGE WITH FRANCE.

Premium per Mille on Price of 21s 6d fms.	25-12½	25-15	25-17½	25-20	25-22½	25-25	25-27½	25-30
Per Mille								
12	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓
13	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓
14	61	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓
15	61 ⅓	61	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓
16	61 ⅓	61 ⅓	61	60 ⅓	60 ⅓	60 ⅓	60 ⅓	60 ⅓
17	61 ⅓	61 ⅓	61 ⅓	61	60 ⅓	60 ⅓	60 ⅓	60 ⅓
18	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61	60 ⅓	60 ⅓	60 ⅓
19	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61	60 ⅓	60 ⅓
20	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61	60 ⅓
21	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61
22	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
23	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
24	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
25	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
26	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
27	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
28	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
29	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
30	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
31	62	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓
32	62 ⅓	62	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓	61 ⅓

The Table shows the net price of Silver at Marseilles, as compared with the Market price in London. The shipping *via* Marseilles saves time it is true, but an allowance must be made for Banking Commission of ⅓th per cent., probably also for Bill Brokerage of 1 per cent.; further it turns out, by experience, that the French Assays are often from 1 to 2 per mille higher than English or Indian Assays—at all events English shippers allege this to be the case, and charge the French with the fact. The French method of Assaying is nevertheless better than our own, and we know it is acknowledged that English Assays, according to the present fashion of reporting them, are always under the mark, so that the real cause of the difference arises on this side.*

* Tables of equivalents, such as we have given them here, by way of illustration, can be made equally with all other Exchanges, either in a single set, without allowance for charges, which may be added to the quotients or deducted therefrom, according to the way the shipment goes; or in a double set, adding charges in the case of exportation, and deducting them in the case of importation, from the rates of Exchange resulting. Practical experience will now and then show results differing from the strict rule; the average, however, may serve as a guide to shippers.

**SHIPMENT OF FIVE FRANCS PIECES FROM
MARSEILLES TO INDIA.**

125 Cases containing 6,000 Francs in 5 Francs pieces—

Fs. 750,000, weighing Kilos. 3728·075, at	
Fs. 202·30 per Kilo	Fs. 754,189·55
Cases and Packing	Fs. 393·75
Shipping Charges, &c.	99·50
	493·25
	Fs. 754,682·80

Drawn for at Fs. 25·20 nett (without Brokerage) £29,947 14s 6d.

The 5 Francs pieces, whose Tariff value is 200 Fs. per Kilogramme, are here invoiced at Fs. 202·30 or $11\frac{1}{2}$ per mille Premium. Sometimes the Franc value is taken, and according to the weight found, a premium is added.

Shipped to Calcutta, as 900 fine (they are occasionally not quite up to this quality), they realise, less 2 per cent. Seignorage, 1 per cent. melting charge, and 1 per cent. loss on melting, per Tola of 180 grains, 0·9602 Rupees or 2·5605 Rupees per oz. Troy weight.

The above 3728·075 Kilos, at the customary rate of conversion of 31·1 grammes per oz., are equal to 119,874 oz., costing

£29,947 14 6

Add—

Freight to India at $1\frac{1}{2}$ per cent.	£449 0 0
Insurance $\frac{1}{2}$ per cent.	149 15 0
Petty Charges	3 0 0
	601 15 0
	£30,549 9 6

Total cost at Calcutta, 61·163 Pence per oz. 900 fine, or $62\frac{1}{2}$ Pence per oz. British Standard, giving an Exchange of 23·887 Pence per Rupee, or 1s $11\frac{1}{2}$ d.

The results of the Shipments are dependent again upon the Premium on the Coin paid in France, and upon the rate of Exchange between Marseilles or Paris and London.

SILVER DOLLARS TO SHANGHAI,

PER PENINSULAR AND ORIENTAL STEAMERS *viâ* SOUTHAMPTON.

Fifty Cases, containing each 2,000 Mexican Dollars, 100,000 Dollars in all, weighing

86,722 oz., at 60d per oz.	. . .	£21,680 10 0
Packing and Cases . . .	£8 10 0	
Cartage, &c.	1 17 6	
Brokerage $\frac{1}{8}$ per cent. . .	27 0 0	
Freight $2\frac{1}{2}$ per cent. . .	540 0 0	
Insurance 1 per cent. . .	216 0 0	
		793 7 6
		£22,473 17 6

ACCOUNT SALES IN SHANGHAI.

100,000 Dols., at 760 Taels per 1000 Dollars . . .	76,000
Less Landing Charges, &c.	15
	Taels 75,985

Giving an Exchange of 71 Pence per Tael.

Mexican Dollars are subject to great fluctuations in price at Shanghai. At their equivalent in Silver they are worth 72·7 Taels; when the shipping of goods to Europe is limited, and Dollars are abundant in the market, they fall below Par; the price has been as low as 65 Taels per 100; when they are down to this low rate it is profitable to melt them into Sycee. But when Shipping is active, and Exchange on Europe offered, they rise in value, occasionally so high as 80 Taels per 100. Dollars are an article of considerable speculation with the Chinese, and also with European traders. The price realised for the above shipment was 76 Taels per 100, which is a fair rate for times of moderate business operations. The Exchange resulting is dependent on the rate per oz. in London, and on the price per 100 Dollars in Shanghai.

SILVER FROM CALIFORNIA TO HONG KONG.

The rich Silver mines opened in 1860 in California furnish many millions of Silver per annum; and, as the Port of San Francisco,

on the opposite side of the Pacific Ocean, is within 50 to 70 days sail by clipper ship, or 30 to 35 days by steamer to Hong Kong, California is now a convenient market for the supply of Silver to China for European account. Shippers in San Francisco are accordingly furnished with Credits from Anglo-Indian Banks, to draw 60 days' sight or short Bills on London, and invest the proceeds in the purchase of Silver for China. But most of the Californian Silver is Doré Silver, or not fine enough for China, where B 17 to 17½ is required. The arrangements for Refining Silver in California are not ample enough as yet to refine the whole production; and, as the charge for Refining is higher over there than it is in Europe, the Silver which is actually refined on the spot has to be bought at a premium varying from 2 to 6 per cent., according to the demand for China.

We subjoin an actual operation of this kind.

INVOICE OF EIGHT BOXES REFINED SILVER BARS, SHIPPED FROM
SAN FRANCISCO TO HONG KONG.

SILVER BAR.	FINE.	WEIGHT.	VALUE.
		Ozs.	Dols.
1	997	751·50	968·76
1	998	1,084·20	1,398·98
1	997	977·80	1,260·43
1	997	653·20	842·01
1	997	990·55	1,276·86
1	997	810·15	1,044·32
1	996½	677·00	872·24
1	997	593·90	765·56
1	997	1,429·34	1,842·56
1	996½	624·35	804·41
1	997½	896·00	1,155·56
1	996½	732·35	943·56
1	997	703·00	906·19
1	997	664·59	856·72
1	997	710·60	915·99
		12,298·53	15,854·15

SILVER SHIPMENTS.

419

Premium about $2\frac{5}{8}$ per cent. - - 413·17

Dols. 16,267·32

CHARGES.

Custom House Clearance	-	-	1·00	
8 New Boxes at 2 Dols.	-	-	16·00	
Cartage	-	-	3·00	
Insurance $\frac{1}{2}$ per cent.	-	-	81·00	
Bill of Lading Stamp	-	-	0·50	101·50

Dols. 16,368·82

Drawn for upon London at the Exchange of $49\frac{1}{2}$ Pence per Dollar
(including Californian Bill Stamp), 16,368·82 = £3,376 1 4

OUT-TURN OF SAME, 8 BOXES REFINED SILVER BARS, IN HONG KONG.

8 Boxes refined Silver Bars,
weighing 12,298·53 oz. or Taels 10,180·902
Sold at 11 per cent. premium
for the Betterness - - 1,119·899

11,300·801

At 717 Taels per Dols. 1000 Dols. 15,761·23

CHARGES TO DEDUCT.

Freight $\frac{1}{2}$ per cent. on Dols. 15,854·15	.	.	79·27
Primage at 5 per cent.	.	.	3·95
Landing Charges	.	.	2·25
Brokerage at $\frac{1}{8}$ per cent. on Dols. 15,761·23	.	.	19·70

105·17

Dols. 15,656·06

thus giving an Exchange of $51\frac{1}{4}$ Pence per Dollar.

giving thus a direct profit of £21 15s 4d on the transaction, and as compared to the London Shipment, costing £3,522 16 0

Adding Interest for three months going out at

5 per cent. per annum	44 0 3
Do. for nine months on Bills returned .	132 0 9
Bill Stamps	3 10 0

£3,702 7 0

A total advantage of £304s 10 4d, or about 9 per cent. is gained. This transaction was exceptionally profitable. California will in future supply the greater portion of Silver required for China.

CHAPTER III.

THE SHORT EXCHANGE.

THE Short Exchanges, or Cash Exchanges, as we have established them, on the basis of the “Mint Pars” of Exchange, in the chapters preceding, are theoretically the neutral points or rates, indicating that the commercial relations between England and the other parts concerned are properly balanced, and that there is no call for Bullion shipments in either direction. A departure from these neutral rates, in one direction or the other, turns the Exchange *favorable to one* and *unfavorable* to the other country; and if the difference is sufficiently large to cover the expenditure of forwarding Bullion, shipments of that commodity are made, provided always, of course, the article can be procured; which is not always the case in countries where a forced Paper Currency prevails. The annexed table gives, in the first column, the Mint Pars of Exchange; in the second column, the Rates of Exchange when they have become *so favorable* to England as to bring Bullion over here; and in the third column the Rates of Exchange when they are so unfavorable to us as to compel us in our turn to part with Bullion.

But this rule of Bullion shipments holds good only with respect to certain countries in easy communi-

cation with us—such as France, Holland, Hamburg, Spain, America, India, China, and some others ; but Austria, South Germany, Italy, Switzerland, and other States, are not so conveniently placed. The charges of forwarding Bullion between them and England are heavier. Instead of dealing direct with these countries, other Bullion centres—Hamburg, Amsterdam, Paris, Marseilles—ship or receive Bullion for English account, whereby time and charges are saved. Thus, if Gold is wanted for Genoa, instead of sending Bars or Sovereigns from London across the Channel, then through France by land, and from Marseilles again by sea, it comes much cheaper to order a shipment of Napoleons at once direct from Marseilles to Genoa, and to reimburse Marseilles either by Draft from there or by remitted Bills. The debit or credit thus accruing between England and these intermediate places is settled in the usual way.

The *favorable* or *unfavorable* state of the Exchange may also be balanced by Drafts or Remittances through other intermediate places, where the English or Foreign Exchange holds a reversed position ; a *favorable* Exchange upon Italy may thus be used to cover an *unfavorable* Exchange with France, and so forth.

Costs of conveyance, and charges for risk, and other contingencies, compel us to be sparing of the actual transmission of hard money ; but the tendency of the favorable or unfavorable Exchange has the same effect upon the international account as actual shipments of Bullion.

TABLE OF PARS OF EXCHANGE COMPARED TO SHORT EXCHANGES,
FAVORABLE OR UNFAVORABLE TO ENGLAND.

	Metallic Par of Exchange.	Short Exchange favorable to us to Bullion point.	Short Exchange unfavorable to us to Bullion point.
FRANCE & BEL- GIUM	£ 1 = Fs. 25·22½	Fs. 25·35	Fs. 25·10
SWITZERLAND & ITALY*	" 1 = " 25·22½	" 25·37½	" 25·07½
NORTH GERMANY	" 1 = Thr. 6·24½	Th. 6·25½	Th. 6·22½
SOUTH GERMANY	" 10 = Fl. 119·10 Kr.	Fl. 120·00	Fl. 118·20
HAMBURG	" 1 = B. M. 13·7½ Sch.	B.M. 13·9	B.M. 13·5
BREMEN	" 100 = L.Th. 612·½	L.T. 619·	L.T. 607·
AUSTRIA*	" 1 = Fl. 10·21½	Fl. 10·30	Fl. 10·12½
HOLLAND	" 1 = " 12	" 12·05	" 11·90
SWEDEN	" 1 = R.Dlr. 17·80	R.D 17·95	R.D 17·65
NORWAY	" 1 = S.Dlr. 4·58 Skg.	S.D. 4·64 Skg.	S.D. 4·52 Skg.
DENMARK	" 1 = R.Dr. 8·9½ "	R.D. 9·0½ "	R.D. 8·88
RUSSIA*	Rble. 1 = 38½ Pence	37½ Pence	38½ Pence
GREECE	£ 1 = Drach. 28·17	Dr. 28·35	Dr. 28·00
SPAIN*	Dolr. 1 = 49½ Pence	49 Pence	50 Pence
PORTUGAL	Milrs. 1 = 53½ "	52½ "	53½ "
TURKEY	£ 1 = Pstrs. 110½	Pstr. 112	Pstr. 109½
EGYPT	" 1 = 100½	" 102	" 99½
UNITED STATES	£22·10 = Dlr. 109½	Dols. 110	109
BRITISH NORTH AMERICA	Dolr. 1 = 50 Pence	49½ Pence	50½ Pence
MEXICO... ..	" 1 = 51½ "	50½ "	52½ "
CNTRL. AMERICA, NEW GRANADA, and PERU	" 1 = 47½ "	46½ "	48½ "
CHILI	" 1 = 45 "	44 "	46 "
URUGUAY	" 1 = 48½ "	47½ "	49 "
BRAZILS*	Milrs. 1 = 26·93	26½ "	27½ "
LA PLATA STATES	Dolr. 1 = 48½ "	47½ "	49½ "
INDIA	Rup. 1 = 22½ "	21½ "	23½ "
CHINA	Tael 1 = 71½ "	69 "	73½ "
JAPAN	Dolr. 1 = 51½ "	49½ "	53½ "

In the Countries marked * the actual quotations of the day are in Paper Money, and vary accordingly from the Cash basis here adopted.

The subjoined Table shows the variations in the Short Exchange with France during the last ten years. We select the French Exchange as the one most important to us. For each month in each year we give the two principal rates prevailing. At $25\cdot22\frac{1}{2}$ the balance may be said to be complete, when the Exchange rises to $25\cdot17\frac{1}{2}$, or $25\cdot15$ it is unfavorable, when it falls to $25\cdot27\frac{1}{2}$ or $25\cdot30$ it is favorable to England. At the rate of $25\cdot12\frac{1}{2}$ Bullion begins to leave England for France, at $25\cdot10$ or $25\cdot07\frac{1}{2}$ or $25\cdot05$ the shipments increase in activity. At the rate of $25\cdot32\frac{1}{2}$ Bullion comes from France to England, at $25\cdot35$ or $25\cdot40$ at an increased ratio.

DATE.	PRICE.	DATE.	PRICE.	DATE.	PRICE.	DATE.	PRICE.
1858.		December	$25\cdot07\frac{1}{2}$	November	$25\cdot07\frac{1}{2}$	October	$25\cdot25$
January	$25\cdot22\frac{1}{2}$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot10$	"	$25\cdot20$
"	$25\cdot17\frac{1}{2}$	1859.		December	$25\cdot07\frac{1}{2}$	November	$25\cdot10$
February	$25\cdot12\frac{1}{2}$	January	$25\cdot15$	"	$25\cdot10$	"	$25\cdot25$
"	$25\cdot07\frac{1}{2}$	"	$25\cdot10$	1860.		December	$25\cdot20$
March	$25\cdot10$	February	$25\cdot12\frac{1}{2}$	January	$25\cdot10$	"	$25\cdot15$
"	$25\cdot07\frac{1}{2}$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot07\frac{1}{2}$	1861.	
April	$25\cdot10$	March	$25\cdot12\frac{1}{2}$	February	$25\cdot10$	January	$25\cdot17\frac{1}{2}$
"	$25\cdot05$	"	$25\cdot07\frac{1}{2}$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot25$
May	$25\cdot07\frac{1}{2}$	April	$25\cdot05$	March	$25\cdot08\frac{1}{2}$	February	$25\cdot22\frac{1}{2}$
"	$25\cdot05$	"	$25\cdot05$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot37\frac{1}{2}$
June	$25\cdot05$	May	$25\cdot07\frac{1}{2}$	April	$25\cdot15$	March	$25\cdot40$
"	$25\cdot07\frac{1}{2}$	"	$25\cdot10$	"	$25\cdot20$	"	$25\cdot37\frac{1}{2}$
July	$25\cdot05$	June	$25\cdot10$	May	$25\cdot10$	April	$25\cdot35$
"	$25\cdot07\frac{1}{2}$	"	$25\cdot07\frac{1}{2}$	"	$25\cdot15$	"	$25\cdot15$
August	$25\cdot12\frac{1}{2}$	July	$25\cdot07\frac{1}{2}$	June	$25\cdot17\frac{1}{2}$	May	$25\cdot20$
"	$25\cdot22\frac{1}{2}$	"	$25\cdot10$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot37\frac{1}{2}$
September	$25\cdot20$	August	$25\cdot10$	July	$25\cdot12\frac{1}{2}$	June	$25\cdot37\frac{1}{2}$
"	$25\cdot17\frac{1}{2}$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot15\frac{1}{2}$	"	$25\cdot32\frac{1}{2}$
October	$25\cdot15$	September	$25\cdot12\frac{1}{2}$	August	$25\cdot12\frac{1}{2}$	July	$25\cdot35$
"	$25\cdot07\frac{1}{2}$	"	$25\cdot15$	"	$25\cdot17\frac{1}{2}$	"	$25\cdot42\frac{1}{2}$
November	$25\cdot05$	October	$25\cdot12\frac{1}{2}$	September	$25\cdot17\frac{1}{2}$	August	$25\cdot37\frac{1}{2}$
"	$25\cdot10$	"	$25\cdot10$	"	$25\cdot12\frac{1}{2}$	"	$25\cdot45$

DATE. PRICE.	DATE. PRICE.	DATE. PRICE.	DATE. PRICE.
September 25·45	April 25·25	1865.	September 25·25
" 25·40	May 25·22½	January 25·15	" 25·21
October 25·37½	" 25·22½	" 25·17½	October 25·25
" 25·32½	June 25·22½	February 25·15	" 25·15
November 25·30	" 25·22½	" 25·12½	November 25·17½
" 25·25	July 25·25	March 25·17½	" 25·15
December 25·30	" 25·30	" 25·22½	December 25·17½
" 25·27½	August 25·27½	April 25·20	" 25·18½
1862.	" 25·32½	" 25·15	1867.
January 25·25	September 25·27½	May 25·17½	January 25·15
" 25·15	" 26·22½	" 25·22½	" 25·14
February 25·15	October 25·25	June 25·17½	February 25·11
" 25·17½	" 25·17½	" 25·20	" 25·15
March 25·17½	November 25·22½	July 25·20	March 25·14
" 25·30	" 25·30	" 25·15	" 25·18
April 25·27½	December 25·25	August 25·17½	April 25·15
" 25·25	" 25·30	" 25·22½	" 25·12
May 25·25	1864.	September 25·22½	May 25·12
" 25·20	January 25·22½	" 25·25	" 25·18
June 25·22½	" 25·27½	October 25·25	June 25·15
" 25·27½	February 25·27½	" 25·27½	" 25·14
July 25·25	" 25·35	November 25·22½	July 25·17
" 25·20	March 25·27½	" 25·12½	" 25·15
August 25·25½	" 25·15	December 25·10	August 25·15
" 25·22½	April 25·15	" 25·12½	" 25·20
September 25·17½	" 25·20	1866.	September 25·21
" 25·20	May 25·27½	January 25·12½	" 25·17
October 25·20	" 25·37½	" 25·17½	October 25·17½
" 25·17½	June 25·27½	February 25·17½	" 25·12
November 25·17½	" 25·17½	" 25·25	November 25·14
" 25·15	July 25·20	March 25·27½	" 25·12
December 25·17½	" 25·25	" 25·22½	December 25·12
" 25·22½	August 25·25	April 25·20	" 25·15
1863.	" 25·32½	" 25·10	1868.
January 25·15	September 25·25	May 25·12½	January 25·15
" 25·20	" 25·35	" 25·05	" 25·12
February 25·22½	October 27·37½	June 25·14	February 25·12
" 25·25	" 25·22½	" 25·09	" 25·15
March 25·20	November 25·25	July 25·10	March 25·12½
" 25·25	" 25·17½	" 25·12½	" 25·15
April 25·17½	December 25·20	August 25·15	" 25·15
	" 25·15	" 25·30	

CHAPTER IV.

THE LONG EXCHANGE.

IN the preceding pages our business has been with Hard Cash, either in Coin or in Bullion. The Rates of Exchange resulting from the transactions discussed there are called the SHORT RATES OF EXCHANGE, in contradistinction to the LONG RATES OF EXCHANGE.

Bills drawn and paid *on demand* or *at sight*, sent from one place to another, have, as a rule, practically the same effect as shipments of Coin or Bullion: the holder receiving money on presentation.

As a matter of theory, shipments of Metal, if properly insured and otherwise guarded against accidents, must be regarded as still better than sight Bills, as they at once secure absolute possession.

Bills at sight are, after all, but pieces of paper, liable to be dishonoured; and, however small this risk may be with Bills issued by the resident Bank or or Banker, the theoretical inferiority to hard Cash remains nevertheless. They are, however, more convenient to the merchant than Bullion; they are generally cheaper, according to the state of the Exchanges, especially for small amounts. Resting, as they do, on the basis of hard cash, as a rule, they do not involve the consideration of credit in the same manner as Bills drawn at the so-called *Long Exchange*.

THE LONG EXCHANGE.—A Bill drawn by one firm on another departs from the Cash basis at once if not made payable at sight or on demand, no matter whether the stipulation be that it should be paid one day or two days, or eight days, or ten days afterwards. Still, in ordinary Commerce a Bill is considered *short* when it is payable a few days after arrival in the place on which it is drawn. The Banker, however, who must have interest for his money, takes these days into account in fixing a Rate of Exchange. When Bills are longer, say when they are due in twenty, thirty, or forty-five days, they are no longer short Bills, but they fall within the intermediate class between the short and the long Exchange, by which latter term Bills at three months are generally designated. The three months' Exchange is the *full* long Exchange as generally understood.

When a Bill is thus drawn, the credit of the Drawers, Acceptors, and Endorsers upholds its value until it falls due and is cancelled by payment.

The custom of drawing Bills at dates longer than *short*, up to three months or more, has its origin in mercantile transactions, where it becomes necessary to combine the granting of a Credit to the Debtor or Acceptor with the Exchange operation. In former times, before we enjoyed the present rapid means of international communication, goods sent from one part to another took a much longer time to arrive, and even conveyance by post required as many days as it now does hours; the laws on mercantile proceedings generally were also more stringent than they are now,

so that it became *customary* in the greater part of business transactions to have recourse to reimbursement by Bills of Exchange drawn at *usance* from one place upon another.

Thus the *usance* from London upon most of the Continental towns is three months, on Spain and Portugal 90 days', date or sight; on American ports 60 days' sight. Again, for certain descriptions of goods, it is customary to draw at 30 days, for others 45 days, or two months, &c. From and upon India the *usance* is six months.

Although the more rapid means of communication now existing have already much modified the strict adherence to the *usance*, the custom, with the exception of ports at a great distance, having become almost unnecessary, yet a larger proportion of mercantile international transactions is still conducted upon the basis of the three months' Exchange, and in most *courses of Exchange* the three months' rate is the one principally quoted.

The question of credit, *as such*, involved in a three months' Bill, is a matter for separate and distinct consideration. The Banker or the Holder of a Bill of this kind must estimate the credit value according to the principles current in the business, and according to his own individual method. In so far as the subject falls under our consideration here, the difference between a short and a three months' Bill is purely arithmetical.

The difference between Short and Long Bills depends on the varying Rates of yearly Interest for money at different times and in different localities.

An order for the payment of the amount of £100 to-day is worth £100. An order for the payment of the same amount three months afterwards, if the rate of interest is four per cent per annum, or £1 for three months, is worth to-day only £99; so that to make it also worth £100 to-day it ought to be drawn for the amount of £101.

The same principle applies to the rates of Exchange. A Draft on Paris, payable at sight, for Fs. 2522·50, would at the Exchange of Fs. 25·22½ give exactly £100 here; but if the Bill is at three months, and exactly £100 here are required, with the Rate of Interest in Paris ruling at 4 per cent. per annum (or 1 per cent., or about 25 Centimes per £ for three months),

the amount drawn must be . . .	Fs. 2547·50
to realise, less interest . . .	25

Fs. 2522·50

or Fs. 25·22½ per £.

It must, therefore, be drawn at the Exchange of Fs. 25·47½, called the Long Exchange in this case. If the Interest is only 2 per cent. per annum, 12½ Centimes will constitute the difference, and so forth; if the Short Exchange, here taken at 25·22½, varies above or below that figure, the Long Exchange will vary with it.

Now, if a Draft on London be required in Paris, the Short Exchange being the same there, the £100 would cost also Fs. 2522·50; but if the draft be made at three months, interest in London being also 4 per cent., the Banker in Paris might afford to give £101 for the same amount of Francs, which would

make the rate of Exchange Fs. $24\cdot97\frac{1}{2}$ Centimes ; so that at the three months' rate he would give £100 for Fs. $2497\frac{1}{2}$.

This illustrates the proportionate Exchanges (Interest in both places being 4 per cent.)

Three Months' Bills in London upon		
Paris	Exchange	Fs. $25\cdot47\frac{1}{2}$
Sight Bills in London on Paris, or in		
Paris on London .	Short Exchange	Fs. $25\cdot22\frac{1}{2}$
Three Months' Bills in Paris upon		
London	Exchange	Fs. $24\cdot97\frac{1}{2}$

the 1 per cent. interest for three months, equal to 25 Centimes, being in the first case added to, and in the third case subtracted from, the short rate of Exchange.

The Rate of Interest ruling at the place upon which the Exchange is made thus enables the inquirer to make out the Short Exchange from the Long, and *vice versa*

The French Exchange being, say,

SHORT.				LONG.
25·15—	Interest	in	France at 2 per Cent.	= $25\cdot27\frac{1}{2}$
"	"	"	3 per Cent.	= $25\cdot33\frac{1}{2}$
"	"	"	4 per Cent.	= $25\cdot40$
"	"	"	5 per Cent.	= $25\cdot46\frac{1}{2}$
"	"	"	6 per Cent.	= $25\cdot52\frac{1}{2}$
"	"	"	8 per Cent.	= $25\cdot65$
&c.				

If the Short Exchange is at $25\cdot22\frac{1}{2}$, $7\frac{1}{2}$ Centimes must be added to the rates for three months ; if at $25\cdot35$, 20 Centimes must be added.

Supposing the case to be reversed, the same short

rates being taken as the Exchange in Paris on London, the Long Exchange will be found, by deducting the number of Centimes representing the Interest.

The Long Exchange in either place is dependent therefore

1st.—Upon the rise and fall of the Short Exchange, and

2nd.—Upon the variations of the Interest ruling in the place upon which Draft is made, to be added or subtracted from the rate.

This rule applies to all the Exchanges quoted in the same manner as the French Exchange in England, where the £1 is taken as the Unit to start from, viz.:

The Exchanges so quoted are

The Dutch £1	=	12·00	Florins	} (as short metallic pars)
„ Belgian	=	25·22 $\frac{1}{2}$	Francs	
„ French	=	25·22 $\frac{1}{2}$	„	
„ Hamburg	=	13·07 $\frac{1}{2}$	Mks Banco	
„ Italian	=	25·22 $\frac{1}{2}$	Lire	
„ N. German	=	6·24 $\frac{1}{2}$	Thaler	
„ Austrian	=	10·21 $\frac{1}{2}$	Florins	
„ S. German £10	=	119·10	„	
&c.				

The £ *Sterling* in these cases is the *fixed rate*, the *foreign monies* given constitute the *variable rate*.

In certain other Exchanges custom has reversed the position; the *Foreign money* is made the *Unit* to start from as the *fixed rate*, and the *British equivalent* is made *variable*. The Exchanges so quoted are—

The Spanish	1 Dollar	=	49 $\frac{1}{2}$	Pence British.
„ Portuguese	1 Milreis	=	53 $\frac{1}{4}$	„ „
„ Russian	1 Rouble	=	38 $\frac{1}{2}$	„ „

Thus, if the Short Exchange on Madrid is worth 5 Pence per Dollar, and Interest at Madrid rules at 8 per cent. per annum, or 2 per cent. for three months, equal to 1d on the above rate, the three months' Exchange is worth only 49 Pence. And if the Short Exchange in Madrid on London stands at $49\frac{1}{2}$ Pence, interest in London being at 4 per cent. per annum, or 1 per cent. for three months, making $\frac{1}{2}$ d per Dollar, the Long Exchange in Madrid on London is 50 Pence per Dollar.

By way of introduction to the understanding of the Course of Exchange, the reader should make himself familiar with the simple arithmetical working of the system of Short and Long Exchanges as dependent upon the former rate, and the interest per annum prevailing at the time being.

CHAPTER V.

THE LONDON COURSE OF EXCHANGE.

THE Foreign Bankers and Merchants of London meet in the open Court of the Royal Exchange every Tuesday and Friday, between the hours of two and three in the afternoon, to transact business in the purchase and sale of Foreign Bills. The majority of the firms represented are sellers of Bills that have come to them as remittances from abroad or from the country, which are technically called *Made Bills*; or of so-called *Drawn Bills*, which are simply their own Drafts upon houses abroad against shipments made or orders given. A large number of the firms present on 'Change are foreign Bankers, and Exchange dealers, who purchase such made or drawn paper, or who sell to Merchants or others drafts on places abroad for such specific amounts as may be required.

The interchange of this business is effected chiefly through third parties, the Exchange Brokers, who have either certain Bills to sell for houses not otherwise represented on 'Change, or who negotiate the buying and selling between the houses dealing on 'Change.

The rates being agreed upon, the Broker hands a note to the Buyer, which is called the *Contract*, and which generally runs as follows :

Bought—

Fs. 25,000, 3 Months Brussels at 25·35,
of Messrs. N. N. & Co.

April 10th, 1868.

A. & B.,
Sworn Brokers.

The figures are filled in on the spot in pencil.

And to the Seller a similar note or contract :

Sold—

Fs. 25,000, 3 Months Brussels at 25·35,
Order of W. S. & C. value of the same.

April 10th, 1868.

A. & B.,
Sworn Brokers.

These notes serve as a memorandum to Seller and Buyer; they are binding at the same time on both parties as contracts made and accepted. After 'Change the Seller prepares and indorses his Bills, and sends them to the Buyer, with the account, and this account is paid for by the passing of a Receipt Draft on the 'Change-day following. Thus Bills bought on Tuesday are paid for on Friday, and those bought on Friday on the Tuesday following.

The Brokerage amounts to $\frac{1}{10}$ th per cent., which is invariably paid by the Seller; but in a great many cases the Broker also receives a commission from the Buyer, unless it be agreed beforehand

with the Broker that the Buyer should go free, or unless *free* is endorsed on the contract.

The Brokerage accounts are paid at the end of each year.

After the business is over the Brokers note the rates of Exchange made, and issue their Courses of Exchange, which are generally found or made to agree.

LONDON COURSE OF EXCHANGE.—FEBRUARY 28th, 1868.

AMSTERDAM	...	...	3 months	11 : 19 $\frac{1}{2}$	12 :
"	...	...	short	11 : 18	11 : 18 $\frac{1}{2}$
ROTTERDAM	...	...	3 months	11 : 19 $\frac{1}{4}$	12 : $\frac{1}{4}$
BRUSSELS AND ANTWERP	...	...	"	25 : 32 $\frac{1}{2}$	25 : 37 $\frac{1}{2}$
HAMBURG	...	...	"	13 : 9	13 : 10
PARIS	...	...	"	25 : 30	25 : 35
"	...	...	short	25 : 12 $\frac{1}{2}$	25 : 20
MARSEILLES	...	...	3 months	25 : 30	25 : 35
FRANKFORT-ON-THE-MAINE	...	...	"	120 : $\frac{1}{4}$	120 : $\frac{1}{2}$
VIENNA	...	...	"	11 : 85	11 : 90
TRIESTE	...	...	"	11 : 85	11 : 90
BERLIN	...	...	"	6 : 26 $\frac{1}{2}$	6 : 27
ST. PETERSBURG	...	...	"	32 : $\frac{1}{4}$	32 : $\frac{1}{2}$
COPENHAGEN	...	...	"	9 : 18	9 : 22
GENOA	...	...	"	29 : 25	29 : 35
LEGHORN	...	...	"	29 : 25	29 : 35
NAPLES	...	...	"	29 : 25	29 : 35
PALERMO AND MESSINA	...	...	"	29 : 25	29 : 35
MADRID	...	...	"	48 : $\frac{3}{8}$	48 : $\frac{5}{8}$
BARCELONA	...	...	"	48 : $\frac{3}{4}$	48 : $\frac{7}{8}$
CADIZ	...	...	"	48 : $\frac{1}{2}$	48 : $\frac{3}{4}$
LISBON	...	...	90 days' date	51 : $\frac{3}{8}$	51 : $\frac{1}{2}$
OPORTO	...	...	"	51 : $\frac{3}{8}$	51 : $\frac{5}{8}$
NEW YORK	...	...	60 days' sight	...	...
RIO DE JANEIRO	...	...	"	...	...

These figures are understood to mean that for Bills on—

AMSTERDAM, at 3 months :	are given	for
	Fls. 11·19 $\frac{1}{2}$ Stiver to Fls. 12·00 Stiver =	£1
„	at short date :	
	Fls. 11·18 Stiver to Fls. 11·18 $\frac{1}{2}$ Stiver =	£1
ROTTERDAM, at 3 months :		
	Fls. 11·19 $\frac{3}{4}$ Stiver to Fls. 12·0 $\frac{1}{4}$ Stiver =	£1
BRUSSELS and ANTWERP, at 3 months :		
	Fcs. 25·32 $\frac{1}{2}$ Cents to Fcs. 25·37 $\frac{1}{2}$ Cents =	£1
HAMBURG, at 3 months :		
	Bco. Mks. 13·9 Schge. to Bco. Mks. 13·10 Schge. =	£1
PARIS, at 3 months :		
	Fcs. 25·30 Cents to Fcs. 25·35 Cents =	£1
„	at short date :	
	Fcs. 25·12 $\frac{1}{2}$ Cents to Fcs. 25·20 Cents =	£1
MARSEILLES, at 3 months :		
	Francs 25·30 to Francs 25·35 . . . =	£1
FRANKFORT-ON-THE-MAINE, at 3 months :		
	Florins 120 $\frac{1}{4}$ to Florins 120 $\frac{1}{2}$. . . =	£10
VIENNA and TRIESTE, at 3 months :		
	Florins 11·85 to Florins 11·90 . . . =	£1
BERLIN, at 3 months :		
	Thl. 6·26 $\frac{1}{2}$ Silbg. to Thl. 6·27 Silbg. . . =	£1
ST. PETERSBURG, at 3 months :		
	32 $\frac{1}{4}$ Pence to 32 $\frac{1}{2}$ Pence . . . =	1 Rouble
COPENHAGEN, at 3 months :		
	Rkdlr. 9·18 Sk. to Rkdlr. 9·22 Sk. . . =	£1
GENOA, LEGHORN, NAPLES, } at 3 months :		
MESSINA, PALERMO . . . }		
	Lire 29·25 Cents to Lire 29·35 Cents . . =	£1
MADRID, at 3 months :		
	48 $\frac{3}{8}$ Pence to 48 $\frac{5}{8}$ Pence . . . =	1 Dollar
BARCELONA, at 3 months :		
	48 $\frac{3}{4}$ Pence to 48 $\frac{5}{8}$ Pence . . . =	1 Dollar
CADIZ, at 3 months :		
	48 $\frac{1}{2}$ Pence to 48 $\frac{3}{4}$ Pence . . . =	1 Dollar
LISBON, at 90 days :		
	51 $\frac{3}{8}$ Pence to 51 $\frac{1}{2}$ Pence . . . =	1 Milrêis
OPORTO, at 90 days :		
	51 $\frac{3}{8}$ Pence to 51 $\frac{5}{8}$ Pence . . . =	1 Milrêis
NEW YORK, at 60 days' sight :		
	— Pence to — Pence . . . =	1 Dollar

RIO DE JANEIRO, at 60 days' sight :

— Pence to — Pence = 1 Milrêis

(For the two last no prices were made on the 28th Feb.)

The places in this list are those usually given in the London Course of Exchange. Calcutta, Bombay, &c. are quoted in some of the Courses of Exchange.

The first thing likely to strike the reader is the incongruity in the system of taking the £1 in some cases, the 1 Rouble, the 1 Dollar, the 1 Milrêis in others, and in one case the £10, as the fixed Unit. Why not adopt the £1 as the Unit for all Exchanges? There can be no doubt but this would be the more consistent and more convenient plan; however, custom has established the present system, and although all are agreed upon the necessity for doing away with the anomaly, yet custom is too strong in favour of its maintenance. It might further be suggested that all the Exchanges should be quoted as *Short*, and that the rates of Interest should be given upon which the Long Exchanges might be computed. Custom again stands in the way of this simple and reasonable reform.

The three months' Exchange is still considered the ruling rate, and only the Amsterdam and the Paris Exchange are also quoted *Short*. However, short in these cases does not mean *sight*, but three, four, or ten days' paper.

We will now reduce this Course of Exchange as it stood on the 28th February 1868 to the short rates, the Interest at the respective places being given in the leading column.

The two other columns give, the first the Short Rates, the second the Mint Pars as found in Part II., Chapter I. A comparison between these and the present Short Exchange will then enable us to judge of the actual position of each Exchange. We take the dearest Exchange as the one from which to make the Short ; thus, if Paris is quoted 25·30 to 25·35, we take 25·30 as the fairest quotation, considering that Bill Stamps, Brokerages, &c., have to be taken into account.

COURSE OF EXCHANGE, ON 28TH FEBRUARY 1868,
Reduced to Short Exchanges.

Interest.		Short Rate.	Mint Par.
3½ per Cent.	AMSTERDAM	11·17½	12·00
3½ „	ROTTERDAM	11·17½	12·00
2½ „	BRUSSELS	25·16½	25·22½
3 „	HAMBURG	13·7½	13·7½
2½ „	PARIS	25·14	25·22½
2½ „	MARSEILLES	25·14	25·22½
3 „	FRANKFORT	119½	119½
4 „	VIENNA	11·72½	10·21
4 „	TRIESTE	11·72½	10·21
4 „	BERLIN	6·24	6·24½
6 „	ST. PETERSBURG . . .	0·33	0·38½
4 „	COPENHAGEN	9·8	8·94
5 „	GENOA AND LEGHORN . .	28·87½	25·22½
5 „	NAPLES AND MESSINA . .	28·87½	25·22½
5 „	MADRID	0·49½	0·49½
5 „	BARCELONA	0·49½	0·49½
5 „	CADIZ	0·49½	0·49½
5 „	LISBON	0·52½	0·53½
5 „	OPORTO	0·52½	0·53½

This comparison shows :—

That the Exchanges between London and

Hamburg	} Were balanced within small fractions.
Frankfort	
Berlin	
Barcelona	

That the Exchanges between London and

Amsterdam	} Were unfavorable to England to the extent shown.
Rotterdam	
Brussels	
Paris	
Marseilles	
Cadiz	

That the Exchanges between London and

Copenhagen	} Were favorable to England.
Madrid	
Lisbon	
Oporto	

And finally that the Exchanges between

Vienna	} Were <i>exceptionally</i> in favor of this Country.
Trieste	
St. Petersburg	
Genoa and Leghorn	
Naples and Messina	

This exceptionally favourable proportion does not arise from the Mint Par; it is simply due again to the great financial evil, the forced Paper Currency, in which Bills drawn upon these places are supposed to be paid. The extent of the Premium on Hard Coin can be estimated by these departures from the Mint

Pars of Europe, and by the rates here resulting; it was at the time being

In St. Petersburg	.	.	about 16 per cent.
In Vienna and Trieste	.	„	15 „
In Genoa, Naples, Leghorn, &c.	„	14 $\frac{1}{2}$	„

We here refer the reader back to Part I, Chapter III, on Currency; and to Part II, Chapter I, under the respective headings of Austria, Russia, and Italy.

The indications here given will enable the reader to understand the London Course of Exchange; and, to establish the Short Exchanges, all that it is necessary to know, is the respective Rate of Interest at which the Long Rates of Exchange can be thus severally discounted.

CHAPTER VI.

FOREIGN COURSES OF EXCHANGE.

IN England we have two classes of Bankers,—the so-called local Bankers, to which our powerful Joint Stock Banks and the great private Banking firms belong; and the so-called foreign Bankers. The local Banker, or English Banker proper, principally deals in British Money, and is supposed, both as keeper of cash accounts and deposits, and as discounter of Bills or dealer in Money, to confine his operations chiefly to Bills payable in England, and to local matters generally. Such Foreign Exchanges as come into his hands are disposed of at once through Brokers.

The Foreign Banker in London, in his turn, buys such Bills of Exchange; his business lies chiefly with abroad; he maintains a large correspondence with Bankers and Merchants all over the world, and frequently combines Foreign Banking with certain other mercantile operations. The distinction between the *English Banker* and the *Foreign Banker* in London, and between their respective lines of business, is well recognised. On the Continent this is different. The Bankers in France, Germany, and other parts, combine the functions of both classes of Bankers in

England. They not only keep accounts with the local merchants, manufacturers, or private individuals, but they deal largely also in all sorts of securities, whether home or foreign, amongst which Bills on other countries play an important part.

The Portfolio of an English Banker contains only English local Bills, but the Portfolio of Bankers abroad contains, besides local Bills, also Bills on England, France, Germany, Russia, Spain, Italy, &c.

The fact is that the requirements of business in England, where so vast an amount of enterprise continually extends the boundaries of commerce, fully engage the English Banker, and that he is thus under no necessity of seeking investment for his funds in Foreign securities of this kind. Whereas the Bankers abroad, proceeding altogether upon a plan different from the English Banking system, do not so readily find convenient investment for large sums of money, and are therefore driven to deal in a variety of Bills. This comparative greater scarcity of home business, however, finds its counterpoise in the very large field opened to the Banker abroad; the peculiar nature of his business compels him to adapt his knowledge to the more universal character of his operations. A Foreign Banker, therefore, is generally a good linguist; he is acquainted with the commerce of other countries; he is bound, in fact, to educate himself for his business. Thus armed and prepared, he finds himself enabled to deal profitably with all sorts of Foreign Exchanges; to enter into arbitrations, and other business, which the English Banker has no inclination to embark upon.

In most of the large Continental cities there is consequently almost always a *stock* (if we may use this term) of Foreign Bills, in which the Bankers deal with their customers, or among themselves.

The English Bill Exchange, which takes place Tuesdays and Fridays, is essentially held for the *bonâ fide* consumption of Paper offering, and is comparatively a small one: the Foreign *Bourses* generally take place every day, and speculative dealings in Exchanges, as well as absorption of Bills, give them the character of larger and closer markets of Exchange.

The conditions of Brokerage, &c., abroad are generally the same as in England.

We now give the Courses of Exchange as issued at the principal towns, showing the systems pursued.

PARIS.

Paris, Vendredi, 28 Février 1868.

Escompto.	Changes.	À 3 mois.	À courte échéance.
VALEURS SE NÉGOCIENT À TROIS MOIS.			
3½ pr Ct.	AMSTERDAM	209¼ à 210	209⅓ à 209⅔ et 4 per Cent.
3 "	HAMBOURG	185⅓ „ 185⅔	184⅓ „ 184⅔ et 4 „
4 "	BERLIN .	364½ „ 365½	364 „ 365 et 4 „
6 "	MADRID .	509 „ 510	510 „ 511 et 4 „
5 "	CADIX .	„	„ et 4 „
5 "	BARCELONE	511 „ 512	512 „ 513 et 4 „
5 "	LISBONNE	540 „ 541	540 „ 541 et 4 „
5 "	PORTO .	540 „ 541	540 „ 541 et 4 „
4 "	VIENNE .	211 „ 212	211 „ 212 et 4 „
4 "	TRIESTE .	210 „ 211	210 „ 211 et 4 „
3 "	FRANCFORT	209 „ 209¼	208 „ 208¼ et 4 „
6 "	PETERSBOURG	339 „ 340	340 „ 341 et 4 „

PARIS (*continued*).

Escompte.	Changes.	À 3 mois.	À courte échéance.
VALEURS SE NÉGOCIANT À VUE.			
2 per Ct.	LONDRES.	25·14½ à 25·19	25·11½ à 25·16½ m 2 pr Cent.
2½ „	BELGIQUE	1½ b à 1½ p	½ p à pair m 2½ „
5 „	ITALIE	13p à 12½ p	13 p à 12½ p m 5 „
L'Escompte, à la Banque de France, est à 2½ per Cent. (sur avances 3 pour Cent).			

COURS DES MONNAIES, MATIÈRES D'OR ET D'ARGENT.

Fr p 1000.	Or en barre, à $\frac{1}{1000}$ le kil.	3434 Fr. 44 C. pr. 0f50 à pair
	Louis d'or, à $\frac{1}{1000}$ le kil.	3094 Fr. 43 C. pr. 3f
	Pièces de 20 à 40 Fr., agio	pair
	Argent en barre à $\frac{1}{1000}$ le kil	218 Fr. 89 C. pr. 9f „ 10f
La Pièce.	Quadruples espagnols	 83 50 „ 84
	Quadruples indépendants.	 80 75 „ 81
	Souverains anglais	 25 07½ „ 25 10
	Ducats de Hollande.	 11 70 „ 11 75
	Ducats d'Autriche	 11 75 „ 11 80
	Piastres à colonne	 5 35 „ 5 40
	Piastres mexicaines de poids	 5 35 „ 5 40
	Bank Notes	 25 07½ „ 25 10
	Post Bills	 25 12½ „ 25 15

The places standing under the head of "Valeurs se Négociant à Trois Mois" are quoted at the Three Months' Exchange, and the rate paid for every 100 of the foreign monetary units is expressed in Francs. For Spanish, Portuguese and Russian paper the quotation gives also the rate in Centimes for the 1 Dollar, 1 Milreïs, and 1 Rouble, which of course amounts to the same thing as the quotation in Francs for the 100 Dollars, Milreïs, or Roubles.

Under the head of "Valeurs se Négociant à Vue" the Exchange

taken is the absolute short, and for London the £1 Sterling is taken as the Unit. For Belgium and Italy, where the same monetary system as in France prevails, a premium or discount is quoted.

The first column in the table gives the rates of discount current in the towns in the second column; the third column states the prices made for three months' paper, and the fourth column the rates for short paper, computed upon the three months' Exchange, with the rates of interest added, which Paris Bankers are supposed to allow or to charge for short. But these are only nominal rates of Interest; in actual bargains the rates of discount are more closely followed. Thus three months' Amsterdam, at the three months' Exchange, is Fs. 209½ à 210 per 100 Florins, but sight Amsterdam at the three months' quotation of 209½ à 209½, say 209.25
With 4 per cent. Interest for three months 2.09

Fs. 211.34

per 100 Florins.

The Interest is subtracted from the rates given under the "Valeurs se Négociant à Vue." Thus London three months, at the quoted sight Exchange of 25.14 à 25.19, say Fs. 25.16½
Less Interest at 2 per cent. for three months 0.12½

Making three months' London Fs. 25.04

The rate quoted in the fourth column, "À courte échéance" for London, is the guiding rate for cash payments between the two places.

The quotations for Coins and Bullion, "Cours des Monnaies, Matières d'Or et d'Argent," show that

Or en barre	} 1,000	is Fs. 3,434.44 per Kilo	{ at ½ per Mille Premium to Par.
(Gold bars)	} 1,000		
Argent en barre	} 1,000	is Fs. 218.89 per Kilo	{ at 9 à 10 per Mille Premium.
(Silver bars)	} 1,000		

The rates being those of the "Tariff du Commerce."

Comparing now the rates of Exchange in London with those at Paris, selecting, for instance, Amsterdam, quoted at the cheaper rate :

In London, £1 = Fl. 12

In Paris, Fl. 100 = Fs. 209½

An Exchange of Fs. 25·17 results

between London and Paris. The Exchange quoted for London is 25·12½ to 16½ or, taking the mean, Fs. 25·14 ; thus showing a margin or profit of 3 Centimes per £, which, however, is not enough to cover Bill, Brokerage, Stamps, &c.

Italy at three months is quoted in London 29·25 a 29·35, say Fs. 29·30. In Paris it is 13 per cent. perte or loss, or 100 Lire for 87 Francs. Interest being at 5 per cent., 100 Lire at sight are = Lire 101·25 at three months ; consequently

? = £1

If £1 = 25·14 Francs.

Fs. 87·00 = 101·25 Lire Italiane.

= 29·25

These examples lead the way to arbitrations of Exchanges.

BRUSSELS.

Bruzelles, Mercredi, 26 Février 1868.

CHANGES.

AMSTERDAM . . .	211 50	LONDRES . . .	25 15 à 25 17½
BERLIN . . .	368 50	PARIS . . .	100
FRANCFORT S/M . .	210	ROTTERDAM . .	211 25
HAMBOURG . . .	186	VIENNE . . .	213

With the exception of London, which is here quoted per £1, all the other rates are quoted on the basis of 100 Foreign Units for the rates in Francs stated, and all of them are for *short*. The Brussels Course of Exchange is thus one of the simplest and easiest understood ; for the three months' Exchanges the respective Interest has to be deducted.

TURIN.*Torino, 27 Febbraio 1868.***CAMBJ.**

	A 30 GIORNI		A 3 MESI	
	denaro	lettera	denaro	lettera
FRANCOFORTE S/M. . . .	—	—	238 90	239 25
LIONE (LYONS)	—	—	113 90	114 —
LONDRA (LONDON). . . .	—	—	28 70	28 75
PARIGI (PARIS)	—	—	113 90	114 ...
ROMA	—	—	—	...

VALUTE.

	denaro	lettera
PEZZI DA 20 FRANCHI (20 FRANCS GOLD PIECES)	22 87	22 89
„ DA 5 FRANCHI ARGENTO (5 FRANCS PIECES)	5 71 $\frac{3}{4}$	...
SPEZZATI IN ARGENTO (SPECIE)	114 30	...

Again 100 Foreign Units = the Rates in Lire quoted, except London, which is quoted per £1. The Rates are for three months. The expression “denaro” signifies the buyer’s rate, “lettera” the seller’s rate. The prices are all for Paper money, Paris and Lyons therefore are at 13·90 to 14 premium, and Specie at 14·30 premium. Rome, for which no quotations are given here, is at present at about 625 Lire per 100 Scudi. In Genoa and other Italian Towns Amsterdam, Hamburg, and Spanish places are sometimes quoted; but the principal business is now done in Exchange on Paris, Lyons, London, and Frankfort.

BERLIN.*Berlin, 19 Februar 1868.*

WECHSEL-COURSE. BANKDISCONTO 4 PRO CENT.

	Zl.	Cours. v. 18.	Cours. v. 19.
AMSTERDAM . . . 250 Fl. 10 T.	3	143 $\frac{3}{8}$ bz.	143 $\frac{3}{8}$ bz.
„ . . . „ 2 M.	3	143 $\frac{3}{8}$ bz.	143 $\frac{3}{8}$ bz.
HAMBURG . . . 300 Mk. 8 T.	3	151 $\frac{1}{2}$ bz.	151 $\frac{1}{2}$ bz.
„ . . . „ 2 M.	3	151 $\frac{1}{4}$ bz.	151 $\frac{1}{4}$ bz.
LONDON . . . 1 Lstr. 3 M.	2	6 24 $\frac{3}{8}$ bz.	6 24 $\frac{3}{8}$ bz.
PARIS . . . 300 Fr. 2 M.	2 $\frac{1}{2}$	81 $\frac{1}{2}$ bz.	81 $\frac{1}{2}$ bz.
WIEN . . . 150 Fl. 8 T.	4	86 $\frac{7}{8}$ bz.	86 $\frac{7}{8}$ bz.
„ . . . „ 2 M.	4	86 $\frac{1}{4}$ bz.	86 $\frac{1}{4}$ bz.
AUGSBURG . . . 100 Fl. 2 M.	4	56 26 G	56 26 G
FRANKFURT . . . 100 Fl. 2 M.	3	56 28 G	56 28 G
LEIPZIG . . . 100 Thl. 8 T.	4	99 $\frac{5}{8}$ G	99 $\frac{5}{8}$ G
„ . . . „ 2 M.	4	99 $\frac{5}{16}$ G	99 $\frac{5}{16}$ G
PETERSBURG . . . 100 S.R. 3 W.	7	93 $\frac{1}{2}$ bz.	93 $\frac{1}{2}$ bz.
„ . . . „ 3 M.	7	92 $\frac{1}{4}$ bz.	92 $\frac{3}{8}$ bz.
BREMEN . . . 100 Thl. 8 T.	3 $\frac{1}{2}$	111 $\frac{1}{2}$ G	111 $\frac{1}{2}$ G
WARSAU . . . 90 S.R. 8 T.	6	84 $\frac{3}{4}$ bz.	84 $\frac{3}{8}$ bz.

GOLD, SILBER UND PAPIERGELD.

	Cours. v. 18.	Cours. v. 19.
FRIEDRICHS D'OR	113 $\frac{1}{4}$ G	113 $\frac{1}{4}$ G
GOLD KRONEN	9. 10 $\frac{1}{4}$ G	9. 10 $\frac{1}{4}$ G
LOUIS D'OR	112 $\frac{1}{4}$ G	112 $\frac{3}{8}$ G
SOVEREIGNS	6. 24 $\frac{3}{8}$ G	6. 24 $\frac{3}{8}$ bz.
NAPOLÉONS D'OR	5. 13 $\frac{1}{2}$ bz.	5. 13 $\frac{1}{4}$ bz.
IMPERIALE per Zpfd. . . .	469 G	469 G
DOLLARS	1. 12 $\frac{1}{4}$ bz.	1. 12 $\frac{1}{4}$ B
SILBER per Zpfd. . . .	29 Thl. 25 Sgr. G	29 Thl. 25 Sgr. G
OESTR. BANKNOTEN	86 $\frac{7}{8}$ bz.	86 $\frac{1}{2}$ bz.
RUSSISCHE „	84 $\frac{1}{8}$ bz.	85 $\frac{1}{8}$ bz.

The manner of quoting is fully set forth in this Exchange List. The quotations are given in Thaler with fractions, or in Thaler and Groschen.

The time is expressed by M (months), W (weeks), T (days), Zf. in the second column means "Zinsfuss" (Rate of Interest).

The letters "bz." after a quotation mean "bezahlt" or paid, indicating that these prices are currently paid; whilst the capital letter "G" stands for "Geld" (Money), meaning that at the quotation in question Money can easily be had for the Exchange.

This Course of Exchange dates from the 19th February, the rates in the third column being those of the 18th, the day before.

FRANKFORT ON THE MAINE.

Frankfurt am Main, 28 Februar 1868.

WECHSEL IN SÜDDEUTSCHER WÄHRUNG.

Amsterdam	Fl. 100 . . .	k.S.	100 $\frac{1}{2}$ G.
Ditto	Fl. 100 . . .	l.S.	...
Antwerpen	Frs. 200 . . .	k.S.	95 G.
Ditto	Frs. 200 . . .	l.S.	...
Augsburg	Fl. 100 . . .	k.S.	99 $\frac{1}{4}$ G.
Ditto	Fl. 100 . . .	l.S.	...
Berlin	Thlr. 60 . . .	k.S.	105 B.
Ditto	Thlr. 60 . . .	l.S.	...
Bremen	Thlr. 50 Lsd. .	k.S.	97 $\frac{1}{8}$ B.
Ditto	Thlr. 50 Lsd. .	l.S.	...
Brüssel	Frs. 200 . . .	k.S.	95 G.
Ditto	Frs. 200 . . .	l.S.	...
Cöln	Thlr. 60 . . .	k.S.	105 B.
Ditto	Thlr. 60 . . .	l.S.	...
Genua	Frs. 200 . . .	.	...
Hamburg	M.B. 100 . . .	k.S.	88 $\frac{3}{8}$ G.
Ditto	M.B. 100 . . .	l.S.	...
Leipzig	Thlr. 60 . . .	k.S.	105 B.
Ditto	Thlr. 60 . . .	l.S.	...
London	Lst. 10 . . .	k.S.	119 $\frac{5}{8}$, $\frac{3}{4}$ bez.
Ditto	2 à 3 Monat .	l.S.	...
Lyon	Frs. 200 . . .	k.S.	...
Mailaud	Frs. 200 . . .	k.S.	...

FRANKFORT (*continued*).

Mailand	Frs. 200	.	l.S.	...
München	Fl. 100	.	k.S.	99 $\frac{3}{4}$ G.
Ditto	Fl. 100	.	l.S.	...
Paris	Frs. 200	.	k.S.	95 $\frac{3}{8}$ B. $\frac{1}{8}$ G.
Ditto	Frs. 200	.	l.S.	...
Petersburg	60 S.-Rbl.	.	.	...
Triest	Fl. in öst. W.	.	k.S.	...
Ditto	Fl. in öst. W.	.	l.S.	...
Turin	Frs. 200	.	.	...
Wien	Fl. in östr. W.	.	k.S.	101 $\frac{1}{4}$, $\frac{1}{2}$ bez.
Ditto	Fl. in östr. W.	.	m.S.	101 $\frac{1}{4}$, $\frac{1}{2}$ bez. mit 4 pro cent.
Ditto	Fl. in östr. W.	.	l.S.	101 $\frac{1}{4}$, $\frac{1}{2}$ bez. mit 4 pro cent.
Disconto 3 pro cent. G.				

GELD SORTEN.

	Fl.	Kr.
Preussische Cassen-Sch. (Prussian Notes)	1 44 $\frac{1}{2}$	—45 $\frac{1}{2}$
Preussische Friedrichs d'Or	9 57 $\frac{1}{2}$	—58 $\frac{1}{2}$
Pistolen	9 49	—51
„ Doppelte	9 50	—52
Holländische 10 Florin Stücke	9 54	—56
Ducaten	5 37	—39
„ al marco	5 38	—40
20 Franken Stücke	9 32	—33
Englische Sovereigns	11 54	—58
Russische Imperiale	9 50	—52
Gold per lb. fein	...	
5 Franken Thaler	...	
Hochhaltig Silber per lb. fein	...	
Dollars in Gold	27 $\frac{1}{2}$	—28 $\frac{1}{2}$

The Exchanges are quoted in Florins, the fixed rates being placed against them.

K S means Kurze Sicht (Short.)

L S means Lange Sicht (Long.)

The letter B means "Briefe," that is to say, the Seller's rate; G designates the Buyer's rate; Bez (Paid) the actual prices made.

HAMBURG.*Hamburg, 24 Februar 1868.***WECHSEL.** (Notiz vom 21 Februar.)

			OFFICIELLE NOTIZ		Bezahl (heute.)
			N.F.	Geld.	
Paris . . . per 100 Bco. M.	3 Mt.	2	187	187 $\frac{1}{2}$	187 $\frac{1}{8}$
„ . . . „ „ „	kurz	...	186	186 $\frac{1}{2}$	186 $\frac{1}{8}$
Bordeaux . . „ „ „	3 Mt.	2	187 $\frac{1}{8}$	187 $\frac{3}{8}$	187 $\frac{1}{4}$
Antwerpen . . „ „ „	3 „	2	187 $\frac{1}{4}$	187 $\frac{3}{4}$	187 $\frac{1}{8}$
„ . . . „ „ „	kurz	...	186 $\frac{1}{8}$	186 $\frac{1}{2}$	186 $\frac{3}{8}$
Genua . . . „ „ „	3 Mt.	5	215	217	...
Livorno . . . „ „ „	3 „	5	215	217	...
St. Petersburg. „ Rub. Silb.	3 „	6	29 $\frac{1}{4}$	29	29 $\frac{3}{8}$
London . . . „ £ Sterling	3 „	1 $\frac{1}{2}$	13·7 $\frac{1}{2}$	13·7	13·7 $\frac{1}{4}$
„ . . . „ „ „	kurz	...	13·8 $\frac{1}{4}$	13·7 $\frac{3}{4}$	13·8
Madrid . . . „ Pes. f. 20 r.d.v.	3 Mt.	...	43 $\frac{1}{2}$	43	...
Cadix . . . „ „ „	3 „	...	43 $\frac{1}{2}$	43	...
Bilbao . . . „ „ „	3 „	...	43 $\frac{1}{2}$	43	...
Lissabon . . . „ Mille Rees	3 „	...	46 $\frac{1}{2}$	46 $\frac{1}{4}$	...
Porto . . . „ „ „	3 „	...	46 $\frac{1}{2}$	46 $\frac{1}{4}$	...
Amsterdam . „ 40 Bco. M.	3 „	3	35·42	35·52	35·48–50
„ . . . „ „ „	kurz	...	35·18	35·28	35·25–27
Frankfurt a. M. „ 100 „	3 Mt.	2	88 $\frac{3}{4}$	89	89 Brief
Augsburg . . „ „ „	3 „	...	88 $\frac{1}{8}$	89 $\frac{1}{8}$	...
Wien . . . „ „ „	3 „	4	88	88 $\frac{1}{2}$	87 $\frac{3}{4}$ –88
Prag . . . „ „ „	3 „	4	88 $\frac{1}{4}$	88 $\frac{3}{4}$	87 $\frac{3}{4}$ –88
Triest . . . „ „ „	3 „	4	88 $\frac{1}{4}$	88 $\frac{3}{4}$	87 $\frac{3}{4}$ –88
Berlin . . . „ 300 „	3 „	2 $\frac{1}{2}$	152 $\frac{1}{2}$	153	152 $\frac{7}{8}$ –153
Breslau . . . „ „ „	3 „	2 $\frac{1}{2}$	152 $\frac{1}{2}$	153	152 $\frac{7}{8}$ –153
Leipzig . . . „ „ „	3 „	2 $\frac{1}{2}$	152 $\frac{1}{2}$	153	152 $\frac{7}{8}$ –153
Bremen . . . „ „ „	3 „	3	137	137 $\frac{1}{2}$	137 $\frac{1}{4}$
Copenhagen . „ „ „	kurz	...	...	...	...

HAMBURG (*continued*).

GELDSORTEN.

	Per	
Silber in Barren, mindestens } 1000 fein }	Mark f.	27 M. 12 Sch. fester Bank- [Preis.
Gold al Marco.	"	429 " 0 "
Kronen	Stück	18 " 8 $\frac{1}{4}$ "
Louis d'Or.	"	11 " 2 "
Ducaten (Holländische) . .	"	101 $\frac{1}{2}$ Sch.
Do (Hambgr. und diverse)	"	101 $\frac{1}{2}$ "
Dän. $\frac{1}{4}$ Reichs-Thl. (Species).	300 M.B.	200 $\frac{3}{4}$ Rigsdaler
Do. $\frac{1}{4}$ do.	"	201 "
Thaler im 14 u. 30 Thl. Fuss .	"	151 $\frac{1}{4}$ Thlr.
$\frac{1}{4}$ -u. $\frac{1}{3}$ -Thl. do. do.	"	151 $\frac{1}{4}$ "
Napoléons d'Or (20 Francs) .	Stück.	10 M. 11 $\frac{1}{2}$ —12 $\frac{1}{2}$ Sch.
Sovereigns (£1)	"	13 M. 7 $\frac{1}{2}$ —8 $\frac{1}{2}$ "
Eagles (5 Dollars)	"	13 M. 14—15 "
Preuss.Bknot.u.Cassenscheine	300 M.B.	151 $\frac{2}{3}$ —151 $\frac{2}{3}$ Thlr.
Diverse do. do.	"	151 $\frac{2}{3}$ —152 $\frac{1}{3}$ "
Do. do. do. (wilde)	"	152 $\frac{1}{3}$ —152 $\frac{2}{3}$ "
Dän. National-Bank-Zettel .	"	200 $\frac{1}{4}$ —201 Rigsdaler

Notiz vom 21 Februar.

Here again the expressions "Briefe," "Geld," and "Bezahlt," will be noticed, and Z. F. (Rate of Interest.)

This Exchange List is issued by one of the largest and most active Banking Firms in Hamburg.

BREMEN.*Bremen, 28 Februar 1868.*

Wechsel Course.	Z. F. pro cent.	Briefe.	Geld.
Hamburg . für 300 Mk. Bco. 6 T.	...	136	135 $\frac{1}{2}$
" . " " " . 3 Mt.	2	...	134 $\frac{1}{2}$
Amsterdam . „ 250 Fl. . 8 T.	...	128 $\frac{1}{2}$	128 $\frac{1}{2}$
" . " " " . 3 Mt.	3	127 $\frac{1}{4}$	127 $\frac{1}{2}$
London . . „ £100 . . 8 T.	...	613 $\frac{1}{2}$	613
" . . " " . . 3 Mt.	2	...	609 $\frac{1}{2}$
Paris . . . „ 1 Franc . . 8 T.	...	17 $\frac{9}{16}$	17 $\frac{1}{2}$
" . . . " " . . 3 Mt.	2 $\frac{1}{2}$	...	17 $\frac{1}{2}$
Brussels . . } „ „ . { 8 T.	...	...	17 $\frac{1}{2}$
Antwerpen . } „ „ . { 3 Mt.	2 $\frac{1}{2}$	...	17 $\frac{1}{2}$
Wien (2 Thl.) „ 100 L. d'Or } 3 Mt.	4	...	130
equal 3 Fl.) } Thl. Gold }			
Augsburg . . „ 100 Fl. . 3 Mt.	3	...	50 $\frac{1}{2}$
Frankfurt . . „ „ „ . 3 Mt.	2	...	50 $\frac{1}{2}$
Berlin . . . { „ 100 L. d'Or } 3 Mt.	2 $\frac{1}{4}$	112 $\frac{5}{8}$	112 $\frac{1}{4}$
Thl. Gold }			
Leipzig . . . „ 100 „ . 3 Mt.	3	112 $\frac{1}{4}$	112 $\frac{1}{2}$
New York . . „ 100 „ . 3 T.S.	...	78 $\frac{1}{2}$	80 $\frac{1}{2}$
Disconto 3 $\frac{1}{4}$ à 3 $\frac{1}{2}$ per cent.			

GELD SORTEN.

Geld in Sorten und Barren per Mpfd. fein	418 L. d'Or Thaler.
Pistolen, per 100 Thaler	100 $\frac{3}{8}$ „
20 Francs Stücke	462 $\frac{1}{4}$ „
Sovereigns	6·7 „
Eagles, per Dollar	1·18 $\frac{1}{4}$ „
Thaler, Silber, per 100 L. d'Or Thaler.	111 $\frac{7}{8}$ „

The quotations for Hamburg, Amsterdam, London, Augsburg and Frankfurt, are in L. d'Or Thaler Gold; for Vienna Thaler (upon the basis of 2 Thaler Prussian = 3 Guilders Austrian), for Berlin and Leipzig Prussian Thaler, for New York Dollars are quoted as against 100 L. d'Or Thaler; for Paris 1 Franc is the fixed rate, quoted in Groten, with fractions to $\frac{1}{16}$ Groten.

The reader will probably agree with us in opinion that the Bremen Course of Exchange is very confusedly constructed.

VIENNA.*Wien, 24 Februar 1868.*

WECHSEL COURSE. 3 Monate.	Z.F. pro Cent.		
Amsterdam 100 h. Fl.	3	99-50	100
Augsburg 100 Fl.	4	99	99-50
Berlin 100 Thaler	4	...	...
Breslau 100 Thaler	4	...	...
Frankfurt 100 Florin	3	99-25	99-75
Genua 100 Lire	5	...	...
Hamburg 100 Mark	3	87-50	88
Leipzig 100 Thaler	4	...	...
Livorno 100 Lire	5	...	...
London £10	2	118-75	119-75
Lyon 100 Francs	2½	...	...
Mailand 100 Lire	5	...	...
Marseille 100 Francs	2½	...	...
Paris 100 Francs	2½	47-10	47-60
Venedig 100 Lire	5	...	...
VALUTEN.			
K. Kronen		16-45	...
K. Münz-Dukaten		5-70	5-75
K. Rand-Dukaten		5-69	5-74
Gold al marco		5-67	...
Napoleons d'Or		9-49	9-54
Souverains d'Or		16-45	...
Friedrichs d'Or		9-90	10
Louis d'Or (deutsche)		9-80	9-90
Englische Sovereigns		11-90	12
Russische Imperiale		9-80	9-90
Silber in ¼ fl.		116-75	117-75
Ditto 1 fl.		116-75	117-75
Ditto Coupons		116-75	117-75
Preuss. Kassa-Anweisung		1-74½	1-75½
Russ. Papier Rubel		1-61	1-64

The quotations are in Florins; but, as must be borne in mind, in Paper Money for the present. The premium on Silber (1 Florin piece) being 16½ to 17½ per Cent.

AMSTERDAM.*Amsterdam, 18 Février 1868.***COURS DE CHANGES.**

PARIS . . . 2 m.	56 $\frac{3}{4}$	LIVOURNE . . 2 m.	40 $\frac{1}{4}$
Id. . . à court.	56	NAPLES . . . „	40 $\frac{1}{4}$
BORDEAUX . . 2 m.	56 $\frac{1}{4}$	VIENNE . . . 6 sem.	99
Id. . . . 15 j.	56 $\frac{1}{2}$	AUGUSTE . . . „	98 $\frac{1}{4}$
MADRID . . . 3 m.	238	FRANCFORT-S-M. „	98 $\frac{1}{4}$
CADIX	238	PETERSBOURG . 3 m.	158 $\frac{1}{2}$
SEVILLE . . . 3 m.	238	ROTTERDAM . .	$\frac{1}{8}$
BILBAO	238	LONDRES . . . 2 m.	11·83
LISBONNE . . . „	40 $\frac{1}{4}$	DITO . . . à court	11·87
PORTE A P. . . „	40 $\frac{1}{4}$	HAMBOURG . . . 2 m.	34 $\frac{1}{4}$
GENES 2 m.	40 $\frac{1}{4}$	DITO . . . à court	35 $\frac{1}{8}$

ROTTERDAM.*Rotterdam, 22 Feb. 1868.***WISSEL KOERSEN.**

LONDEN . . . 3 m.	F 11·83	BERLIJN . . . kort.	F 173·65
Id. . . . 2 m.	11·84 $\frac{1}{2}$	ST. PETERSB. . 3 m.	159·
Id. . . . kort.	11·88	FRANKF. A/M. . 3 m.	98·75
PARIS 3 m.	46·97 $\frac{1}{2}$	Id. . . . kort.	99·30
Id. . . . 2 m.	47·05	AUGSBURG . . . 3 m.	98·50
Id. . . . kort.	47·25	WEENEN . . . 3 m.	98·
ANTWERP . . 3 m.	46·90	TRIEST . . . 3 m.	97·75
Id. . . . kort.	47·15	VENETIE . . . 3 m.	40·25
HAMBURG . . 3 m.	34·95	LIVORNO . . . 2 m.	40·25
Id. . . . 2 m.	35·	GENUA . . . 2 m.	40·25
Id. . . . kort.	35·15	NAPLES . . . 2 m.	40·25
BREMEN . . . 3 m.	190·	LISSABON . . . 3 m.	41·
BERLIJN . . . 3 m.	172·40		

The fixed Rates are, for London £1.

For Paris and . . .	{ 120 Francs in Amsterdam.
Bordeaux . . .	{ 100 Francs in Rotterdam.
For Spain . . .	100 Dollars.
For Portugal . . .	40 Crusados (400 Reis).
For Italy . . .	100 Lire.
For Hamburg . . .	40 Mark Banco.
For Bremen . . .	100 Louis d'Or Thaler.
For Berlin . . .	100 Thaler.
For Frankfort and . . .	} 100 Florins.
Augsburg . . .	
For Vienna and . . .	} 100 Florins.
Trieste . . .	
For Petersburg . . .	100 Silver Roubles.

The official Amsterdam Course is printed in French.

STOCKHOLM.

Stockholm, 14 Februari 1868.

				Säljare. (Sellers.)	Köpare. (Buyers.)	Betalt. Paid.)
Amsterdam	...	...	3 m. d.	150·25	...	150·15
Ditto	...	...	K. S.	152·25	...	152·25
Berlin	...	...	3 m. d.	...	...	...
Ditto	...	...	K. S.	268·	...	268·
Christiania	...	...	3 m. d.	...	...	...
Ditto	...	...	K. S.	...	...	...
Hamburg	...	...	3 m. d.	133·33	133·20	133·25
Ditto	...	...	K. S.	134·40	134·25	134·35
Köpenhamn	...	...	3 m. d.	...	...	...
Ditto	...	...	K. S.	...	...	..
London	...	...	3 m. d.	18·02½	18·	18·02½
Ditto	...	...	K. S.	18·20	...	18·20
Paris	...	...	3 m. d.	71·60	...	71·55
Ditto	...	...	K. S.	72·10	...	72·10
St. Petersburg	...	...	3 m. d.	...	...	...
Ditto	...	...	K. S.	...	...	...

Diskonto 5 à 5½ pro cent. för 3 m. d. Vexlar (Bills).

The fixed rates are 100 foreign money quoted in Riksdaler, except London, which is quoted at so many Riksdaler per £1.

In CHRISTIANIA the quotations on the 28th February were

London . . .	3 months, Speciesdaler 4·67 per £.
Hamburg . . .	3 days' sight, 101 $\frac{1}{3}$ for 300 Marks Banco.
Amsterdam . . .	3 „ „ 95 $\frac{3}{4}$ per 250 Florins.

COPENHAGEN.

Kjöbenhavn, den 31 Januar 1868.

Hamburg k. S. 200 $\frac{1}{4}$ for 300 Mark Banco.

London 3 M. 8 Rdlr. 93 Sk. per £1.

„ K. S. 9 „ 4 „ „

Amsterdam 3 M. 189 $\frac{1}{2}$ for 250 Florin.

Paris 3 M. 34 $\frac{1}{2}$ Skilling for 1 Franc.

Disconto af Hamb. Banco 3 $\frac{1}{2}$ - 4 pro cent.

„ af Rigsmönt-Vexler 4 - 4 $\frac{1}{2}$ pro cent.

„ af do. i Privatbanken 4 - 4 $\frac{1}{2}$ pro cent.

Hamburg and London are the principal Exchanges for Copenhagen.

ST. PETERSBURG.

St. Pétersbourg, 22 Février 1868.

CHANGES.

LONDRES	3 mois	33 $\frac{1}{16}$, $\frac{3}{16}$
AMSTERDAM	3 „	164 $\frac{1}{2}$, $\frac{3}{8}$
HAMBOURG	3 „	29 $\frac{3}{4}$, $\frac{1}{16}$
PARIS	3 „	345 $\frac{1}{2}$, 346 $\frac{1}{2}$
OR: DEMI-IMPÉRIALE	achet.	5·98
„ „	vend.	—

ESCOMPTE: à la Banque de l'État 8 $\frac{1}{2}$ pour cent.

à la Bourse 7 à 7 $\frac{1}{2}$ pour cent.

For London, the quotation means so many Pence per Rouble.

„ Amsterdam „ „ „ Florins per 100 Roubles.

„ Hamburg „ „ „ Schillinge Banco per Rble.

„ Paris „ „ „ Francs per 100 Roubles.

The Roubles are at present “Paper,” and the depreciation of this forced Currency is shown by the quotation of the Half Imperial at 5·98 (its Metallic Value is 5·15), equal to about 14 per cent. premium, as the *buyer's* price.

MADRID.*Madrid, 17 de Marzo de 1868.*

	A 8 dias Vista.	90 dias fecha.
Londres		49, 60 y 70
Paris . . . Francos	5·17	...
Bayona	...	...
Marsella . . . Francos	5·17	...
	Beneficio.	Daño.
Alicante	...	par.
Barcelona	$\frac{1}{2}$	...
Bilbao	...	par.
Badajoz	...	$\frac{1}{2}$
Ciudad-Real	...	$\frac{1}{2}$
Cáceres	...	$\frac{1}{2}$
Cadiz	...	$\frac{1}{4}$
Córdoba	...	par.
Coruña	...	$\frac{1}{2}$
Granada	...	$\frac{1}{2}$ y $\frac{1}{4}$
Logroño	...	par.
Malaga	...	$\frac{3}{4}$ y 1
Murcia	...	$\frac{1}{4}$
Oviedo	...	$\frac{1}{4}$
Palencia	...	$\frac{1}{4}$
Pontevedra	...	$\frac{1}{2}$ y $\frac{3}{4}$
Salamanca	...	$\frac{1}{2}$
Santander	$\frac{1}{8}$	par.
Santiago	...	$\frac{1}{2}$
Sevilla	...	$\frac{1}{4}$ y $\frac{3}{8}$
San Sebastian	...	par.
Valencia	$\frac{1}{8}$	par.
Valladolid	...	par.
Vigo	...	$\frac{1}{2}$
Zaragoza	...	par.

The differences in the Exchanges on the various Spanish Towns show how imperfect the interior intercourse must be.

LISBON.*Lisbonne, le 15 Janvier 1868.*

CHANGES.	PAR.	PAPIER.	ARGENT.
LONDRES 90 j/d .	1 dol. 000 reis	52 $\frac{3}{8}$	52 $\frac{5}{8}$, $\frac{3}{4}$
„ 60 j/d .	„	„	„ } + 2 ½
„ 30 j/d .	„	„	„ }
„ court .	„	„	„ }
PARIS 100 j/d .	3 francs	545	544·45
„ 8 j/vue .	„	549·50	—
HAMBOURG 3 m/d .	1 dol. 000 reis	—	47 $\frac{1}{2}$
AMSTERDAM id. .	16 dls. 000 reis	—	42 $\frac{1}{4}$
GÈNES id. .	3 Lire	en or.	528
MADRID 8 j/vue .	peso fuerte	945	940·42

London is quoted in Pence ; Paris, Genoa, and Madrid in Reis ;
Hamburg in Schillinge Banco ; Amsterdam in Florins.

CONSTANTINOPLE.*Constantinople, le 3 Février 1868.***COURS DES CHANGES.***contre Livre Turque d'Or à P100.*

LONDRES 3/m d . . .	108 $\frac{3}{4}$ à 109 $\frac{1}{4}$	par £1.
PARIS „ . . .	23·15 à	par Livre Turque
MARSEILLE „ . . .	23·20 à 23·25	„
NAPLES „ . . .	27·00 à 27·50	„
GÈNES „ . . .	27·10 à 27·30	„
VIENNE „ . . .	11·05 à 11·20	„

MONNAIES.

Livre Anglaise . . .	109 $\frac{1}{4}$ à 109 $\frac{3}{8}$	
Napoléon . . .	87	
Medjidié d'Argent . .	106 $\frac{1}{2}$	escompte pour
Métalliques . . .	104	1 Livre Turq.

Piastres for the £1 ; Francs for Paris and Marseilles ; Lire for
Naples and Genoa ; and Florins for Vienna per Turkish Pound.

In ALEXANDRIA the quotations were:—

London . . . 3 days' sight	96 $\frac{3}{8}$ a 96 $\frac{1}{4}$ Piastres per £1.
„ . . . 3 months	95 $\frac{5}{8}$ a 96 „ „
Paris . . . 3 days' sight	5·20 a 5·18 Frs. per 20 Piastres.
„ . . . 3 months	5·28 a 5·26 „ „

NEW YORK.

New York, 22nd February 1868.

London . . . 60 days' sight, Commercial Bills	Dls. 109 $\frac{3}{8}$ a 109 $\frac{1}{8}$
„ . . . „ „ Bankers' Bills .	„ 109 $\frac{1}{4}$ a 110
„ . . . Short sight „ „ .	„ 110 $\frac{1}{4}$ a 110 $\frac{3}{8}$
Paris . . . 60 days' sight	Fcs. 5·17 $\frac{1}{2}$ a 5·13 $\frac{1}{4}$
„ . . . Short sight	„ 5·12 $\frac{1}{2}$ a 5·11 $\frac{1}{4}$
Antwerp . . 60 days' sight	„ 5·17 $\frac{1}{2}$ a 5·13 $\frac{1}{4}$
Hamburg „ „	Cents 35 $\frac{7}{8}$ a 36 $\frac{1}{8}$
Amsterdam „ „	„ 40 $\frac{3}{4}$ a 41 $\frac{1}{4}$
Frankfort „ „	„ 40 $\frac{3}{4}$ a 41 $\frac{1}{8}$
Bremen . „ „	„ 79 a 79 $\frac{1}{2}$
Berlin . „ „	„ 71 $\frac{1}{2}$ a 72

The fixed rate for London is £22 10s for the Dollars quoted (100, with premium of 9 to 9 $\frac{1}{8}$), for Paris and Antwerp so many Francs for 1 Dollar.

For Hamburg	1 Mark Banco	} Quoted in Cents.
„ Amsterdam	1 Guilder	
„ Frankfort	1 Florin	
„ Bremen	1 Gold Thaler	
„ Berlin	1 Thaler	

These Exchanges are all on the Gold basis, i. e. paid for in Gold Coin, which as against Paper Money stood at 41 $\frac{1}{2}$ premium at the date of this Exchange List.

In SAN FRANCISCO the quotations were on the 30th January 1868,

London	60 days' sight, Commercial Bills	49 s 49½ Pence per Dol.
"	Bankers "	48½ " "
"	Short sight	47½ " "
Paris	60 days' sight	5·05 Francs "

New York : Short, payable in Currency, 136 to 137 for 100 Dls. Gold.
 Payable in Gold . . . 1 " 1¼ Premium.
 By Telegraph in Gold . . 1¼ " 1½ Premium.
 Fine Gold Bars at Par; 900 fine and under, ¼ per Cent. Premium.
 Silver Bars, par to ¼ Premium.

MEXICO.

25th January 1868.

Havana 30 days' sight . . 8 to 9 Premium for 100 Dollars,
 New York 30 days' sight 10 " 12 " "
 Paris 60 days' sight . . Francs. 4·65 to 4·67½ per Dollar.
 London " Pence 44½ " 45 per Dollar.
 Madrid " 16 Premium for 100 Dollars.

In LIMA quotations were on the 13th February 1868,

London 90 days' sight 36½ Pence per Dollar.
 Paris " " Fs. 3·80 "

In VALPARAISO on the 1st February 1868,

London 90 days' sight 46¼ Pence per Dollar.
 Paris " " Fs. 4·85 "

In BUENOS AYRES the quotations were on the 25th *January* 1868.

London 60 days' sight	. 48 $\frac{1}{4}$ a 48 $\frac{3}{4}$ Pence	} Per Hard Dollar.
Paris „	. 5·03 „ 5·10 Francs.	
Antwerp „	. 5·05 „ 5·12 „	
Hamburg „	. 43 $\frac{1}{2}$ Schillinge	

In MONTEVIDEO on the 22nd *January* 1868.

London 60 days' sight	. 46 $\frac{1}{2}$ Pence per Patacon.
Paris „ „	. 5 Francs „

In RIO JANEIRO *February* 1868.

London 60 days' sight	. 15 $\frac{1}{4}$ a 15 Pence per Milreïs.
Paris „ „	. Reïs 600 a 620 per 1 Franc.
Hamburg „ „	. Rs 1040 a 1050 per 1 Mark Banco.

Gold 87 per Cent Premium. The quotations are in Paper Money.

CALCUTTA.

LONDON—6 months' sight, Bank Bills 22 $\frac{1}{8}$ Pence per Rupee.

„ „ „	1st Class Credits 22 $\frac{3}{4}$ Pence „
„ „ „	with Documents 22 $\frac{1}{2}$ Pence „

PARIS—6 months' sight, Bank Bills 2·35 Francs per Rupee.

„ „ „	with Documents 2·37 $\frac{1}{2}$ Francs per Rup.
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HONG KONG—30 days' sight, 220 Rupees per 100 Dollars.

SHANGHAI—60 days' sight, 315 Rupees per 100 Taels.

In BOMBAY the quotations were—

LONDON, 6 months' sight, 22 $\frac{3}{4}$ Pence per Rupee.

In MADRAS—

LONDON, 6 months' sight, 22 $\frac{5}{8}$ Pence per Rupee.

SHANGHAI.*24th December 1868.*

CLOSING RATES OF EXCHANGE.

ON LONDON .	Bank Bills	sight . . .	5s 10d a 5s 10½d ½ Tael
" .	" "	6 months' sight	6s 0d a 6s 0½d "
" .	Credits	" "	6s 0½d "
" .	Bills with Documents	" "	6s 1d "
ON PARIS .	Bank	" "	Fcs. 7·57½ "
" .	Credits	" "	Fcs. 7·65 a 7·70 "
" .	Bills with Documents	" "	Fcs. 7·65 a 7·70 "
ON CALCUTTA .	Bank Bills	3 days' sight .	Rs. 302 per Tla. 100
ON BOMBAY .	" "	" "	Rs. 300½ " "
ON HONG KONG	" "	On demand .	27½ per cent. discount
" " .	Private Bills . . .	15 days' sight .	28 " "

INTEREST.—12 per cent. per annum on best securities.

PRICES OF BULLION.

MEXICAN DOLLARS .	73·3·0 Taels per 100 Dollars
CAROLUS DOLLARS .	75·5·0 " " "
PEKIN GOLD BARS .	98 Touch, 169·0·0 Taels Shanghai Currency per Bar of Tls. 9·72, Haikwan weight
HAIKWAN SYCEE . .	111·4·0 Taels Shanghai Currency per 100 Taels Haikwan weight
CANTON SYCEE . . .	109·5·0 Taels Shanghai Currency per 100 Taels Canton weight
BAR SILVER	996 Touch or 17 Betterness, Tls. 111·4·0 Shanghai Cur- rency, per 100 Taels Canton weight
COPPER CASH . . .	1,470 per Tael

In HONG KONG the quotations were at the same time.

EXCHANGES.

On London, Bank paper, 6 months', 4s 4d. First-class Credits, 6 months, 4s 4½d a 4s 4½d.
 On Bombay Rs. 218½, and on Calcutta Rs. 218¼, for 3 days' Bank bills.
 On Shanghai, Taels 72 for Bank bills, and Taels 72½ for Private paper, at 30 days'.

BULLION.

Bar Silver, 11¼ per cent. premium; Sycee, 9¼ per cent. premium; Gold Bars, Dols. 23·15; Gold Leaf, Dols. 23·40; Double Eagles, Dols. 18·40 to 18·50; Sovereigns, Dols. 4·65 to 4·70; Clean Dollars, 1½ per cent. premium.

YOKOHAMA.*Yokohama, 3rd January 1868.***EXCHANGE AND BULLION.**

STERLING	. Bank Bills.	. 4 months' sight	4s 4 $\frac{1}{4}$ d.
"	. " " .	6 " "	4s 4 $\frac{1}{2}$ d.
"	. Private Paper	. 4 " "	4s 5d.
"	. " " .	6 " "	4s 5 $\frac{1}{4}$ d.
PARIS.	. Bank Bills	. 4 " "	5.49
"	. " " .	6 " "	5.50
"	. Private Paper	. 4 " "	5.57
"	. " " .	6 " "	5.60
SHANGHAI	. Bank Bills	. 10 days' sight	72 $\frac{1}{2}$ nom.
"	. Private Paper	. 10 " "	73 to 73 $\frac{1}{4}$.
HONGKONG.	. Bank Bills	. 10 " "	1 per cent. disct.
"	. Private Paper	. 10 " "	1 $\frac{1}{4}$ " "
BULLION—Boos.—After advancing to 278, they have again declined, and close at 285 to 290.			

The Rates on London and Paris are per Dollar. Shanghai 100 Dollars per Tael quoted

Boos vary much in price; they are here much above par. On the 28th May 1868 they stood at 330.

CHAPTER VII.

CALCULATION OF EXCHANGES.

WHERE the £ sterling is the fixed rate, and the foreign money the variable rate, to find the value of a given sterling sum in the foreign money, the simple rule is to multiply the sterling sum by the variable rate, or rate of Exchange; *e.g.* the value in francs of £100, at the Exchange of fs.25·32½, is

$$£100 \times 25\cdot32\frac{1}{2} = \text{fs.}2532\cdot50$$

To change a given sum of foreign money into sterling, the rule is to divide the foreign sum by the rate of Exchange; *e.g.*, the value in sterling of fs.1275, at the Exchange of 25·50, is

$$25\cdot5 \overline{) 1275} \text{ (£}50\text{.}$$

Where the foreign money forms the fixed Unit, and the sterling in Pence the variable rate, the rule is simply reversed. The British sterling, reduced first to Pence, is divided by the rate of Exchange; the quotient gives the equivalent in the foreign money; *e. g.* £200, exchanged at 48d per Dollar Spanish, are 1000 Spanish Dollars. To change the foreign money into sterling, the foreign sum is multiplied by the rate of Exchange in Pence; *e. g.*, Roubles 5000, at 30d per Rouble, are £625.

These are simple and easy calculations; but with

odd sums and fractional Exchanges they are somewhat more complicated, and may occasionally seem tedious to people not quite familiar with them. There are sets of Tables published which greatly facilitate the work.

There are, however, many little artifices which a good calculator may find it useful to adopt. When, for instance, the French Exchange stands exactly at fs. 25, and £1632 12s 7d are to be converted into Francs, instead of multiplying the sum by 25, simple division of it by 4—having reduced it first to decimals, with the separating point removed two places towards the right hand—will work quicker; *e. g.*—

$$\begin{array}{r}
 \text{£}1632 \\
 \text{by } 25 \\
 \hline
 8160 \\
 3264 \\
 \hline
 = 40800\text{—} \\
 12\text{s} \times 25 = 300 \\
 \text{Divided by } 20 = 15\text{—} \\
 7\text{d} \times 25 = 175 \\
 \text{Divided by } 240 = 0\cdot72\frac{1}{2} \\
 \hline
 \text{Fs. } 40815\cdot72\frac{1}{2}
 \end{array}$$

By reducing the £1632 12s 7d to decimals—1632·629, with the separating point shifted two places towards the right hand = 163262·9, and dividing this by 4, the same result is obtained much quicker.

If the Exchange is 25·05, add $\frac{1}{4}$ th per cent. of the amount.

$$\begin{array}{r}
 \text{Fs. } 40815\cdot72\frac{1}{2} \\
 81\cdot63 \\
 \hline
 \end{array}$$

$$\text{Making } - \text{Fs. } 40897\cdot35\frac{1}{2}$$

For every $2\frac{1}{2}$ Centimes add $\frac{1}{10}$ th per cent., which makes $\frac{1}{2}$ per cent. for $12\frac{1}{2}$ Centimes, 1 per cent. for 25 Centimes, 2 per cent. for 50 Centimes, &c.

Convert £335 14s 3d into Francs, at the Exchange of $25\cdot38\frac{1}{4}$, in the usual way and by the method here suggested, you certainly will find the latter much more expeditious.

$$£335\ 14s\ 3d = 33571\cdot25.$$

Divide by 4	-	-	-	-	-	Fs. 8392·81
Add 1 per cent. for 25 Centimes	-					83·98
„ $\frac{1}{2}$	„	„	$12\frac{1}{2}$	„	-	41·96 $\frac{1}{2}$
„ $\frac{1}{16}$	„	„	$1\frac{1}{4}$	„	-	4·19 $\frac{1}{2}$
						<u>Fs. 8522·90</u>

To convert Francs into Sterling, divide the amount by the rate of Exchange; *e.g.*—

$$\text{Fs. } 18,395\cdot60 \div 25\cdot12\frac{1}{2} = £732\cdot163$$

or £732 3s 3d.

This is in the ordinary way. A somewhat more convenient way is to multiply the Exchange rate by 4, divide the sum by the product, and multiply the quotient again by 4; *e.g.*—

$$25\cdot12\frac{1}{2} \times 4 = 1005$$

$$18,395\cdot6 \div 1005 = 183\cdot0408 \times 4 = 732\cdot1632$$

or £732 3s 3d.

The French Rates of Exchange all give more convenient figures for divisors when multiplied by 4—thus $25\cdot02\frac{1}{2}$ becomes 1001; $25\cdot17\frac{1}{2} = 1007$; $25\cdot23\frac{3}{4} = 1009\frac{3}{4}$; $25\cdot25 = 101$; $25\cdot50 = 102$. There is this slight drawback, of course, that an additional process of calculation is required, viz., the multiplication of the quotient by 4.

In calculating the Hamburg Exchange the conversion of the sterling Money into Mark Banco may be effected by multiplying the sterling sum, reduced to decimals in the first place, by 13 Mark 8 Schillinge, or 13·5, then by what the rate of Exchange falls short of or exceeds 13 Mark 8 Schillinge, subtracting the last product from the first in the former case, and adding it in the latter. To convert Banco Mark into sterling, reduce the rate of Exchange to Schillinge, or Half or Quarter Schillinge, as the case may be, divide the Hamburg Money by the resulting figure, and multiply the quotient by 16, 32, or 64, as the case may be.

Other Methods of facilitating the work may easily be devised upon the plan of the examples here given. With rates quoted in Pence the calculation is naturally much more simple.

There are also certain charges on Exchanges which must be taken into account in the calculation. Thus, in the French Exchange 1 per mille Brokerage is charged, making $2\frac{1}{2}$ Centimes on the Exchange; then there is the Bill Stamp of $\frac{1}{2}$ per mille = $1\frac{1}{2}$ Centime; Interest 1 per cent. for three months = about 25 Centimes (1 per cent. for three months equal 4 per cent. per annum; at 3 per cent. per annum the Interest is accordingly $18\frac{1}{2}$ Centimes for three months, or $6\frac{1}{2}$ Centimes per month, or $3\frac{1}{2}$ for 14 days). Upon this plan French Exchanges may easily be computed for all sorts of dates and for varying rates of Interest, simply deducting the latter from the long or adding it to the short Exchange.

In the Dutch Exchange 1 per mille is equal to $1\frac{1}{2}$ Cent, or about $\frac{1}{4}$ Stiver; 1 per cent. is equal to $2\frac{1}{2}$ Stiver. In the Portuguese Exchange 1 per mille is equal to $\frac{1}{80}$ th Penny, or 1 per cent. equal to $\frac{1}{2}$ d, &c. &c.

EXAMPLES OF EXCHANGE NOTES.

SIMPLE ACCOUNTS.

Fcs. 42,661·10 due 22nd March 1868 on
 Paris @ 25·30 = £1686 4 3
 22nd December 1867.

Fcs. 5420·10 due 25th March. Paris.
 7321·30 " "
12741·40 @ 25·32 $\frac{1}{2}$ = £503 2 4
 25th December 1867.

Lire 10450·30. Genoa. Due 8th June
 1867, @ 26·82 $\frac{1}{2}$ = £389 11 6
 8th March 1867.

Lit. 6725·00 Naples. Due 8th June.

7078·75 Leghorn.

Lit. 13803·75 @ 26·85 = . . . £514 2 1
8th March 1867.

Fl. 12975. Vienna. Due 10th June,

@ 12·97½ = £1000 0 0

8th March 1867.

Fl. 1305·32. Amsterdam. Due 10th

March, @ 12/01 Stiver = . . . £108 6 6

10th December 1867.

Fcs. 1000. Paris. 10 days' date, @

25·22½ = 39 12 10

Lit. 8784·10. Leghorn, 3 months, @

26·87½ = 326 17 0

£366 9 10

19th March 1867.

Fl. 3539·20. Frankfort. Due 11th June,

@ 120⅓ = £294 12 6

11th March 1867.

Thls. 3000. Berlin. Due 13th December,

@ 6 Thl. 27 Sg. = £434 15 8

13th September 1868.

Rbles. 5743·50. St. Petersburg. Due 15th

June, @ 31¼ = £747 17 0

15th March 1867.

Reals 13350. Madrid. Due 15th June,

@ 48¼ = £134 3 11

15th March 1867.

ACCOUNTS OF BILLS

Bought at 3 Months' Exchange, allowing Interest.

Bought on 17th December 1867, Fr. 6000 Paris, due 30th March 1868, @ $25\cdot32\frac{1}{2}$, less Interest at 3 per Cent. The Account is made out as follows :—

Fs. 6000 Paris for 30th March 1868, @	
$25\cdot32\frac{1}{2} =$	£236 18 5
Less thirteen days' Interest at 3 per Cent.	0 5 1
	<u>£236 13 4</u>

This Bill having to run 13 days longer than 3 months, the Interest is deducted from the product calculated at the three months' Exchange.

Bought 10th December 1867, Fs. 6608·00 @ $25\cdot31\frac{1}{4}$ and 2 per Cent. Interest.

Fs. 6608·00 for 28th December, Paris.	
26·43 Interest @ 2 per Cent., 28th	
December to 10th March.	
Fs. 6634·43 @ $25\cdot31\frac{1}{4} =$	£262 2 0

The Interest for time below 3 months is here added to the amount.

Bought Reals 34484 Barcelona. Due 11th April.

8730	„	16th „	
<u>43214</u>			
101	Interest at 5 per Cent.		
Reals 43315	at $48\frac{1}{8}$		£438 15 9

29th January 1867.

Bought Fl. 10,000. Amsterdam. Due 20th May,

at 11 Fl. 19 Stiver =	£836 16 5
Interest at $2\frac{1}{2}$ per Cent., 20th May to 15th	
June	1 9 10
	<u>£838 6 3</u>

15th March 1867.

The Interest may be added to or subtracted from either the foreign money or the sterling.

ACCOUNTS OF REMITTANCES

Of Bills Purchased on 'Change, showing the Net proceeds.
Purchased in London on 5th March, and remitted to Paris same day.

Fs. 12635 on Paris for 16th March at 25·23½	£500	12	9
2500 " " 25·23½	99	1	2
	599	13	11
1 per mille Brokerage	0	12	0
	£600	5	11

Credit Note received from Paris for the above.

Fs.	Days.	No.	Stamp.
Fs. 12635 Paris, 16th March	11	1665	6·50
2500 " "			1·50
	1665		
15135 Interest at 2½ per Cent.			11·60
19·60			19·60

Fs. 15115·40 Value 5th March.

Interest in this Account is calculated on the Continental principle, with numbers. The amount is multiplied by the number of days the Bill has to run, so as to give the equivalent sum for 1 day's Interest. Thus a number of Bills may be reduced to 1 day's Interest, and the total, multiplied by the rate per Cent., and divided by 360 days (it is customary to take 360 days) gives the Interest for the whole.

PURCHASE ACCOUNTS.

Purchased in London on 28th October 1867, and remitted to Paris.

Fs. 2303·82	Paris.	For 28th Dec. 25·27½	£91	3	0
3101·49	Boulogne	2nd " 25·25	122	16	8
8230·15	Marseilles	28th " 25·30	325	6	0
100·00	Paris	15th Nov. } 25·20	39	1	9
885·00	" "				
Fs. 14620·46	" "		£578	7	5
	1 per mille Brokerage		0	11	7
			£578	19	0

Credit Note returned from Paris.

Fs.	Paris.	For 28th Dec.	Days.	Nos.	Stamps.
2303·82	Paris.	For 28th Dec.	60	1382	1·50
3101·49	Boulogne	2nd „	34	1054	2·00
8230·15	Marseilles	28th „	60	4938	4·50
100·00	Paris (stamped)	15th Nov.	17	167	
885·00	„	„			
<u>14620·46</u>				<u>7541</u>	<u>8·00</u>
60·36		at 2½ per Cent.			52·36
<u>14560·10</u>					<u>Fs. 60·36</u>
14·56		1 per mille Brokerage.			

Fs. 14545·54 Value 29th October.

The Paris Banker may cover this remittance by a draft at sight on London,

For £578 7s @ 25·15 Fs. 14,545·54,

or he may send Bills, of various dates, on this Country for discount, say:—

£100 0 0	for 12th December	43 days	£0 4 9
240 0 0	15th „	46 „	0 12 3
129 5 7	3rd January	65 „	0 9 6
110 0 0	30th „	92 „	0 11 3
<u>579 5 7</u>		@ 2 per cent.	<u>£1 17 9</u>
1 17 9	less Discount.		
<u>577 7 10</u>			
0 19 2	demand Draft on London.		

£578 7 0 @ 25·15 = - - - Fs. 14,545·54

Thus balancing the Account of the London remittance, and showing a small loss on the transaction. It will be observed here that the Paris Banker, wishing to settle the account, draws a small draft for the balance at sight on the London Agents, and adds it to the Bills. Banking Commission is not taken into account here.

Purchased in London 28th January 1868.

Fl. 4208·28 on Amsterdam for 28th April,

@ 12 Fl. 0 $\frac{1}{4}$ Stiver =	£350	6	6
1 per mille Brokerage . . .	0	7	0
	£350	13	7

Credit note returned from Amsterdam for the above.

AMSTERDAM, 30th January 1868.

Fl. 4208·28 28th April, 91 days, 3829.

3829 @ 3 $\frac{1}{2}$ per cent. Fl. 37·23

40·34

Stamp . . . 3·11

Fl. 4167·94 value 30th January.

Fl. 40·34

As with Paris, the Dutch Banker may remit a sight draft on London, for—

£350 19s 8d @ 11/17 $\frac{1}{2}$ = Fl. 4167·94,

or he may cover by remitting several long Bills to his credit under discount, say :—

£123	4	2	due 3rd March 31 days @ 2 pr cnt.	£0	4	3
80	0	0	20th „ 48 „ „	0	4	2
141	15	0	10th April 69 „ „	0	10	9
67	5	4	15th „ 74 „ „	0	5	5
412	4	6		1	4	7
			Stamp	0	5	9
			$\frac{1}{8}$ per cent. Commission	0	10	4
2	0	8		£2	0	8

£410 3 10 at 11/17 $\frac{1}{2}$ = Fl. 4871·03 value 1st February 1868.

As the amounts are usually placed to credit in account, it is not of course necessary or even customary to remit the exact amount; in the case here before us, for instance, more is remitted than will cover what has been received from London.

Purchased in London 11th December 1867,
Of B.^M. 1638/12 Hamburg, 11th March at 13/10½ £120.

Credit note received from Hamburg,

B. ^M . 1638/12	11th March, 86 days, 1410		
	Discount at 2½ per cent.	. .	9/12
	Stamp and Postages	. .	2/10
	Commission	. .	0/11
			<u>13/01</u>
			13/01
<u>B.^M. 1625/11</u>	value 17th December 1867.		

Account of remittance from Hamburg for discount and credit.

			No.
£120	0	0	for 20th February, 25 days, 3000
	0	2	6 Discount at 1½ per cent.
<u>£120</u>	<u>2</u>	<u>6</u>	at 13/7 = B. ^M . 1614/3
			Commission 1/5
			<u>Value 17th December 1867. B.^M. 1615/8</u>

Purchased in London, 21st January 1868.

Rbls. 980·40 St. Petersburg, 21st April,
at 32½ = £131 4s 7d.

Account of realisation of the above in St. Petersburg on 31st January.

Rbls. 980·40	31st January, 81 days, No. 794	
	Discount at 6 per cent.	. 13·23
	Stamp	 0·90
		<u>14·13</u>
		14·13
<u>Rbls. 966·27</u>	Value 31st January.	

Return remittance from St. Petersburg.

£130 0 0 on London, 12th April.

0 1 4 9 days at 2 per cent

130 1 4	Stamp	£0 2 0
	1 per mille Brokerage	0 2 7
	Postages	0 3 0
0 7 7		<u>£0 7 7</u>

£129 13 9 at 32 = Rbls. 972·62.

Value 12th February 1868.

Account showing proceeds in Vienna of a Bank Post Bill of £100, remitted from London.

Purchased of Bank of England, 18th January, Bank Post Bill.

£100 due 25th January.

Note of proceeds of same in Vienna :—

£100 for 25th January at 119·55 = . . . Fl. 1195·50

Interest at 2 per cent. 5·841201·34Commission ·60Value 22nd January 1868 . Fl. 1200·74

PURCHASE ACCOUNT OF REMITTANCES,

LONDON, 25th February 1868.

Fl. 257·53	Frankfort due	4th May	21 days	.	54
186·00	"	10th "	15 "	.	28
192·00	"	11th "	14 "	.	27
100·00	"	12th "	13 "	.	13
198·46	Augsburg due	9th "	16 "	.	32
1321·48	"	15th "	10 "	.	132
					<u>286</u>
510·56	"	31st "	6 "	.	31
<u>2766·03</u>					<u>255</u>

1·42 255 at 2 per cent.

Fl. 2767·45 a $120\frac{1}{4}$ = £230 2s 10d.

The above has been purchased at the 3 months' Exchange of $120\frac{1}{4}$, adding interest at 2 per cent. for the Bills shorter than 3 months, and deducting same for the one longer.

Credit Note returned from Frankfort.

FRANKFORT-ON-THE-MAINE, 29th February 1868.

		Days	Nos.
Fl. 257·53	. . . for 4th May .	67	173
186	. . . 10th „ .	73	136
192	. . . 11th „ .	74	142
100	. . . 12th „ .	75	75
<u>735·53</u>	Frankfort		<u>526</u>
3·29 discount 526 interest at $2\frac{1}{4}$ per cent. . . . Fl. 732·24			
Fl. 198·46	. . . for 9th May .	72	143
1321·48	. . . 15th „ .	78	1031
510·56	. . . 31st „ .	94	480
<u>2030·50</u>	on Augsburg		<u>1654</u>
13·78 1654 at 3 per cent.			
<u>16·32</u>	<u>2·54</u>	$\frac{1}{8}$ per cent. perte de place . . .	Fl. 2014·18
Value 29th February 1868 . . .			<u>Fl. 2746·42</u>

Against this the Frankfort House may either remit sight or long drafts, as we have shown in the case of Paris and Amsterdam, or we may draw at sight upon Frankfort, and sell the draft here on 'Change; thus, a draft for

Fl. 2746·42 at sight on Frankfort may be drawn and sold at
 $119\frac{1}{4} = \text{£}230 \text{ 6s } 2\text{d.}$

CHAPTER VIII.

ARBITRATION OF EXCHANGES.

THE operations known as Arbitrations of Exchanges are, like all other legitimate commercial transactions, based upon the simple maxim—*to buy in the cheapest and to sell in the dearest market.*

To arbitrate means to decide, to judge of, &c. ; in the commercial sense the best definition of the meaning would be *to choose, to select, to make a choice or option from among a number of different things or chances.*

The most primitive proceeding in business is perhaps that of the ordinary hawker or retail dealer, who purchases certain descriptions of goods, in greater or lesser quantities, and, putting his profit per cent. upon the price, sells them in retail, in exchange for the universal medium — Money. The wholesale dealer, who merely buys goods from the merchant or importer, and sells them to the retailer, can scarcely be held to act in a higher capacity, or to perform a superior office, except in so far that his transactions are larger.

The dealer compelled to do a Barter trade, whether retail or wholesale,—to exchange a certain commodity of an estimated settled value, against another, of which

the value has to be determined—departs already from this primitive mode of doing business, and is called upon to make greater use of his judgment in comparing and selecting.

The operations of the merchant, or international trader, who imports and exports goods from and to other countries, are to a certain extent akin to Barter ; and the elements of calculation that have to be taken into account in such operations are more numerous and varied. One of these elements is the state of the Exchanges, the fluctuations of which exercise a favorable or prejudicial influence as the case may be, upon the success of the operation, and the gain expected to be derived therefrom. The ever-varying chances and contingencies of commerce cause these fluctuations ; and these chances and contingencies again are dependent on many causes — ordinary and extraordinary, foreseen and unforeseen, natural and artificial. Abundant harvests or failures of crops, accidents of various kinds, wars and revolutions, will materially influence the Markets and the Exchanges. Speculation and over-trading are often the most effective agents in causing disproportion between the supply and the demand of commodities ; and the supply of and demand for Exchange again obeys the impulse of the latter. Over-supply of goods causes a scarcity of Exchange in the place supplied, and an abundance of it in the place supplying ; a strong demand for goods has the opposite effect. Thus, when India or China have shipped goods to Europe in great excess of what we have shipped to them, Exchange upon London

becomes abundant there. The Indian Bankers at first may take Bills upon England, giving 1 Rupee for $23\frac{1}{2}$ Pence; when their stock of cash gets short, and they are compelled to import Bullion from Europe at an enhanced cost, they have to ask perhaps 24 or 25 Pence to be paid in London for each Rupee given by them in Calcutta. The goods shipped to England against these Bills, may have cost exactly the same price in Calcutta, and there may not be the least difference in their selling price in England; but it is obvious that at 25 Pence per Rupee a larger payment must be made in Sterling money here to the holder of the Bill than at $23\frac{1}{2}$ Pence per Rupee. The difference in this case is more than 6 per cent.; which may be sufficient not only to cancel the supposed profit, but to leave an actual loss on the transaction.

The merchant therefore must take the Exchange into account. His chief factors for calculating the chances of his operations are—

The price of goods at the shipping port;

The price of the same goods at the receiving port;

The state of the Exchange;

and if between these he sees his profit, he operates; if he sees the contrary, and wishes to conduct his business on legitimate principles, he ceases operations until the Markets or the Exchange, or both, turn more in his favor.

He *decides* or *arbitrates* according to these indications. The Exchanges with India and distant ports generally are naturally more subject to important fluc-

tuations than is usually the case with the Exchanges with places nearer by — with the Continental towns, for instance ; in respect to which moreover the more rapid interchange of intelligence exercises a modifying influence on over-trading. The other manifold causes, however, which act upon the Exchanges in all places, bring about oscillations in the rates of Exchange generally.

The Banker in his turn deals with these differences in the Exchanges, and adjusts them by his operations. In the first place, his regard for his own resources and for his ability to procure money compels him passively to follow the rules of supply and demand, by the lowering or raising of the rates of Exchange ; but he may also become a more active agent in these operations, in seeking his profit in buying the cheapest and selling the dearest description of Exchange ; it is this latter class of operations, technically termed *Arbitrations of Exchanges*, which we have here to consider. Arbitrations of Exchanges finally regulate the results of commerce, and have a most important bearing on the *balances of trade*. As an illustration of the principle let us assume the case that London has shipped goods largely—say to Holland—and that by the indebtedness thus created Holland owes us money. Exchange on London in Amsterdam rises accordingly, whilst Exchange on Amsterdam in London becomes cheaper. Let us further assume that England is at the same time in debt to France, which will give rise in London and Paris to a position the reverse of that between London and Amsterdam.

France in its turn may be indebted to Holland, and may thus be in want of remittances on Amsterdam. Now, if actual money were to be employed in settling the accounts, Holland ought to send Bullion to England, England Bullion to France, and France Bullion to Holland. But if the relative indebtedness between the three countries, for argument's sake, be alike in amount, no such shipments, with their attendant risks and charges, will be required.

For England may draw Bills on Holland, and send these Bills to Paris as payment for her own indebtedness to France, and Paris again may remit them to Amsterdam as a settlement of the Dutch claim. These operations will serve to adjust the Exchanges between the three countries, and to restore the balance of trade. That convenient instrument, the legally-executed Bill of Exchange, already acknowledged as the great economiser of metallic currency in the home and in the direct international trade, has its sphere of usefulness thus further enlarged here in an indirect manner. It is upon this principle, somewhat forcibly illustrated by the example here given, that Arbitrations of Exchanges are based; these Arbitrations have been organised into a complete system of operations, extending over the general field of commerce.

Although every commercial operation, from the humblest Hawker's to the highest Banker's, which involves *option, decision, and judgment*, may be looked upon as a species of Arbitration, still we limit the application of the term here to the operations of Merchants and Bankers, as indicative of something

above the ordinary transactions of trade. The foreign Merchant makes Arbitrations of Commodities,* in which he must have regard to the Rates of Exchange. The Foreign Banker makes it part of his business to profit generally by the differences and fluctuations of the Exchanges.

The operations relating to Arbitrations of Exchanges may be classed under three different heads, viz.:—

- 1st. Operations in *direct* Exchange.
- 2nd. Operations in *indirect* Exchange.
- 3rd. Bankers' Arbitrations, or Operations in direct or indirect Exchange, connected more or less with other Banking operations.

The Merchant has an occasional interest in the operations of the first and second class, as will be shown in the course of this chapter; the operations of the third class belong more exclusively to the province of the Foreign Banker.

The direct Exchanges are those which result immediately from the balance of trade between two countries, and which are quoted in the several Courses

* Arbitrations of goods can be reduced to as complete a system as Arbitration of Exchanges. We recommend to the reader a splendid work, full of Practical Illustrations, in the shape of Invoices and Account Sales for all sorts of Export and Import transactions, with Tables of Equivalents computed from comparison with the Exchanges, and full of other useful information, compiled by Mr. Louis Weller, and published by H. Greenwood, Liverpool.

of Exchange. The direct (Short) Exchange between London and Paris (see the London Course of Exchange, page 439) was on the 28th February 1868, fs. 25·14; that between London and Amsterdam was on the 28th February 1868, 11 Fl. 17½ Stiver per £. The direct Exchange between Paris and Amsterdam (see page 444) on the 28th February 1868, was 209½ to 209¾; between Paris and Madrid, 510 to 511.

The rates between Paris and Amsterdam, or between any other two foreign places are the direct Exchanges in so far as the places themselves are concerned, but in regard to England they are also called the Cross Exchanges.

The indirect rate of Exchange between London and a foreign place is the result of the cross Exchange as compared with our direct Exchange. Thus, if a Bill on Paris is bought in London, and remitted to Paris, this is an operation in *direct Exchange*; but if, as we have assumed in the illustration given on page 481, bills on Amsterdam are remitted from London to Paris, and sent thence to Amsterdam, in discharge of the debt owing by France to Holland, this is an operation in *indirect Exchange*. An intermediate Exchange has been made use of here, and the rate of Exchange resulting from the sale of the bills for a certain amount of Francs, as compared with the amount of Sterling which they have cost in London, is called the *indirect rate*.

OPERATIONS IN DIRECT EXCHANGE.

In commercial dealings between England and Continental countries the case of simple indebtedness between two individuals is of the most frequent occurrence.

Suppose a merchant in London owes thus, say the sum of Fs. 50,000 to a correspondent in Paris. There are three ways open to him to settle this account; he may—

1. Send over Bullion.
2. Remit Bills of Exchange at sight or short or long date.
3. Authorise his correspondent in Paris to draw upon him in London.

The amount which he has to pay in Paris is exactly Fs. 50,000; which sum, or rather its equivalent in Sterling, he holds ready here for the settlement of the account. Now, the question is, which of the three ways is the most advantageous for him, that is to say, which will take the smallest amount of Sterling here?

Suppose the quotation in London is:—

Paris short 25·17½.

The quotation in Paris:—

Londres à vue 25·20.

Bullion shipments, as we know by calculation and from experience, realise in Paris—

For Sovereigns	.	.	.	.	.	.	.	.	Fs. 25·05
„ Gold Bars	.	.	.	.	.	.	.	.	„ 25·10

The equivalents in Sterling would therefore be—

For Sovereigns	.	.	.	Fs. 50,000 à 25·05 =	£1,996	0	2
„ Gold Bars	.	.	.	„ 50,000 à 25·10	1,992	0	8
„ Remittance to Paris	.	.	.	„ 50,000 à 25·17½	1,986	1	11
„ Draft from Paris on London	.	.	.	„ 50,000 à 25·20	1,984	2	6

It appears, therefore, in this case, that the shipments of Bullion are much dearer than the Bills, and that of the latter the Paris correspondent's draft on London will take the least Sterling here.

In making this comparison we have left out of account Brokerages and Bill Stamps, which have, however, to be paid for Bills of Exchange.

We will now assume that the house in Paris can discount paper at Three Months at 4 per cent., and that the debtor here, in addition to Bills at sight, has also the choice of good Three Months' Bills at $25\cdot47\frac{1}{2}$ per £. We account for Brokerages and Bill Stamps by adding these items to the Francs or the Sterling, so as to make the net payment in Paris Fs. 50,000 in all three cases.

SIGHT REMITTANCE FROM LONDON TO PARIS.

Fs. 50,000 à $25\cdot17\frac{1}{2}$ £1,986 1 11

(No allowance is made for the Stamp in Paris here, because such sight remittances are frequently made by *Delegations*, which require no Stamp; but if the remittance is a regular Bill of Exchange, a Stamp of $\frac{1}{2}$ per mille, or Fs. 25 is required. Brokerage is not paid in this case, but this charge is also often made.)

Draft made from Paris on London :—

Fs. 50,000·

25· for Stamp

62·50 for $\frac{1}{8}$ per cent. Brokerage

—————
Fs. 50,087·50 à 25·20

—————
£1,987 11 11

Remittance of Three Months' Bill from London to Paris :—

Fs. 50,530·55 à $25\cdot47\frac{1}{2}$

Stamp . . .Fs. 25·30	£1,983 10 8
Dis. 4 o/o per	Brokerage $\frac{1}{10}$ o/o . 1 19 8
ann. for 3	
months . 505·25	
————— 530·55	
Nett in Paris <u>Fs. 50,000·00</u>	<u>£1,985 10 4</u>

The Three Months' remittance would thus prove the cheapest;

the Exchange, in fact, at which it is bought in this case is very favourable.

The practised calculator need not make out this full statement in order to arrive at the results; he simply calculates the charges on the rates of Exchange.

Thus the Sight Bill on Paris is at 25·17½ net

The Sight Bill on London, at 25·20

Less Stamp ½ per mille 0·01½

„ Brokerage ½ per cent. . . . 0·03½

0·04½

25·15½ „

The Three Months' Bill on Paris, at 25·47½

Less Stamp 0·01½

„ Discount 1 per cent. . . . 0·25

„ Brokerage here ⅓ per cent. . . . 0·02½

0·28½

25·18½ „

The last of the three (the Three Months' rate) is consequently the most favourable.

This latter method of calculating the value is not so exact as the former, because the Centimes on the Exchange are not taken into account, but it answers the purpose of a pretty near estimate.

REMITTANCE FROM PARIS TO LONDON.

Suppose the Paris correspondent owes Fs. 50,000 to the house in London, what should be done in order to give the largest sum in Sterling here if demand Drafts on Paris are at 25·25 ?

In London :—

Demand Remittance on London at 25·26½.

In Paris :—

Three Months' Bills in Paris at 25·25½ and 3 per cent.

(Discount in London 3 per cent.)

The Draft from London on Paris sold at 25·25

Brokerage 1 per mille 2½

Fs. 25·27½ net.

The Demand Draft may be drawn on Stamp of 1d.

Demand Remittance on London bought in Paris, free of Brokerage, at net	25·26½
(Stamp in London 1d.)	
Three Months' Remittance bought in Paris, with Brokerage and 3 per cent. interest	25·23½
Brokerage ½ per cent.	0·03½
Stamp on London	0·01½
	<u>0·04½</u>
	<u>Fr. 25·28½</u>

(The 3 per cent. interest is deducted from the rate in Paris, but must be added again when the Bill is discounted in London.)

The Demand Remittance bought in Paris is therefore the cheapest, giving the most £ Sterling here.

REMITTANCE TO HOLLAND.

Suppose the Exchange for short London in Holland is Fl. 11·87½ Cents.

Three Months' Amsterdam in London Fl. 12/1 Stiver (5 Cents = 1 Stiver), the Dutch Interest at 5 per cent.

Shall Holland draw Short on London, or shall London remit a Three Months' Bill.

Draft from Holland £1000 Short at 11·87½ Cents.

	Fl. 11875·00
Brokerage 1 per mille	11·87½
	<u>Fl. 11863·12½</u>

Remittance from London £1000, Three Months' Amsterdam, at Fl. 12/1 Stiver (free of Brokerage) 12050·00

Stamp	6·02½
Discount, 5 per cent.	150·62½
	<u>156·65</u>
	<u>Fl. 11893·35</u>

The remittance is therefore the best in this case. In Holland the quotation is made in Florins and Cents, in London in Florins

and Stiver (1 Stiver = $\frac{1}{16}$ th Florin). In reckoning by the Exchange the Stiver had better be reduced to Cents, thus—

Fl. 12/1 Stiver	Fl. 12.05
Stamp	0.00 $\frac{1}{2}$
Interest for 3 months at 5 per cent.	0.15
	<u>0.15$\frac{1}{2}$</u>
	<u>Fl. 11.89$\frac{1}{2}$</u>

Near enough to the above amount.

REMITTANCE FROM BERLIN.

The sum of £500 is due by Berlin to London.

Shall London draw on Berlin at 3 Months, the Exchange being

Thlr. 6/27 $\frac{1}{2}$ Sg.; or

Shall Berlin buy a Bill on London at 3 Months, and remit it here

at Thlr. 6/24 $\frac{1}{2}$ Sg.

Interest in Berlin being at 4 per Cent., in London at 3 per Cent.

Draft on Berlin at 3 Months.

£500 0 0	to be received here net.	
0 5 0	Bill Stamp.	} Added to the Draft.
0 10 0	Brokerage	

£500 15 0 at Thlr. 6/27 $\frac{1}{2}$ Sg. Thlr. 3463 15 8

The Berlin correspondent receiving this 3 Months' Credit at the rate of 4 per cent. per annum, the Interest to be deducted is

34 19 2

Thlr. 3428 26 6

Now, if this sum be invested instead in a

Bill at 3 Months on London at

Thlr. 6/24 $\frac{1}{2}$, with 1 per mille Bro-

kerage . . . Thlr. 3428 26 6

Less Brokerage . . . 3 12 9

Thlr. 3425 13 9 at 6/24 $\frac{1}{2}$ Sg. = £502 10 3

Bill Stamp 0 5 0

Discount 3 per cent. per annum for 3

Months 3 15 3

4 0 3

£498 10 0

It is better therefore to make a Draft on Berlin.

REMITTANCE TO LISBON.

The sum of £200 is due from London to Lisbon.

Shall Lisbon draw on London at 3 Months at the Exchange of $52\frac{1}{4}$ (Discount here being 2 per cent. per annum), or shall a Bill at 3 Months be sent to Lisbon, bought here at the rate of $51\frac{3}{8}$ d (Interest at Lisbon being 5 per cent).

DRAFT FROM LISBON.

Sum due -	£200	
Add Interest for 3 months at 2 per cent. .	1	
	£201 at $52\frac{1}{4}$ d =	Milreïs 923·253
Bill Stamp-	0·500	
Brokerage $\frac{1}{8}$ th per cent.	1·150	
		1·650
		Milreïs 921·603

REMITTANCE FROM LONDON.

£200 to be paid here at $51\frac{3}{8}$ d per Milreïs .	Milreïs 934·306
Bill Stamp	0·500
Discount 5 per cent. per annum	11·679
	12·179
	Milreïs 922·127

The latter transaction thus giving a slight advantage.

Calculations of this kind can as readily be made for all other descriptions of Exchanges, the factors being the Rates of Exchange, Rates of Interest, Charges for Bill Stamps and Brokerage in either of the two places. The calculations may be made either in full, or simply upon the Rates of Exchange; the comparison of the results will show the course most favorable to pursue.

OPERATIONS IN INDIRECT EXCHANGE.

The *indirect* rate of Exchange, as explained before, is the rate which results from the remittance from one place to another of a Bill of Exchange payable in a third place. Thus, if London has to receive a remittance from Paris, and Paris, instead of being drawn upon, or instead of remitting to London, closing the transaction by a *direct* operation, remits to London a Bill on Amsterdam, the rate resulting from between the Francs in Paris at which such Bill is bought, and the Sterling in London at which it is sold, represents the *indirect* Exchange.

Suppose Paris quotes Amsterdam at 3 Months at Fs. 210 for 100 Florins, and the rate in London is 12 Florins per £ Sterling. The question is, if Fs. 210 are thus laid out in Paris for 100 Florins, and 100 Florins sell here 12 per £, what is the Exchange resulting therefrom between Paris and London? By the chain rule:

How many Francs is = £1 Sterling.

If Sterling 1 = 12 Florins.

If Florins 100 = 210 Francs.

Answer £1 = Fs. 25·20.

Now, if Paris owes to London a certain amount of money, and if a direct Bill on London costs Fs. 25·25 per £ Sterling, it is obviously cheaper to send one on Amsterdam instead; or if London is the debtor of Paris, and direct remittances to Paris give only Fs. 25·15 per £, the Bill on Amsterdam at the indirect Exchange of 25·20 is clearly the more profitable.

Charges of Brokerage are presumed to be the same in the place where either direct or indirect Bills are bought, and also the Stamps; but on indirect Bills there is generally the additional Brokerage for the sale abroad.

Suppose a merchant having to make remittance to Paris receives the following instructions: Remit us direct Bills on Paris if you can get them at an Exchange resulting at Fs. 25·20 here, or you may send indirect Bills, our quotations here being

Amsterdam, 3 Months	-	209 $\frac{1}{4}$	per 100 Florins.
Hamburg	„	- 185 $\frac{1}{2}$	„ „ Mark.
Berlin	„	- 366	„ „ Thaler.
Vienna	„	- 211 $\frac{1}{2}$	„ „ Florins.
Frankfort	„	- 209	„ „ „
Madrid	„	- 509	„ „ Dollars.
Lisbon	„	- 541	„ „ Milreis.
Petersburg	„	- 341	„ „ Roubles.
Belgium	„	1 $\frac{1}{2}$	per cent. perte, and 3 per cent.
Italy	„	12	„ „ 5 „

Finding that the quotations in London for the same Exchanges are

Amsterdam, 3 Months	-	Fl. 12	per £1.
Hamburg	„	- B.M. 13/9	Sch. per £1.
Berlin	„	- Thl. 6/27 $\frac{1}{2}$	Sg. „
Vienna	„	- Fl. 11·92 $\frac{1}{2}$	„
Frankfort	„	- Fl. 120 $\frac{1}{4}$	per £10.
Madrid	„	- 48 $\frac{1}{2}$	Pence per Dollar.
Lisbon	„	- 51 $\frac{1}{2}$	„ „ Milreis.
Petersburg	„	- 32 $\frac{3}{8}$	„ „ Rble.
Belgium	„	- Fs. 25·40	per £1.
Italy	„	- Lire 29·10	„

He calculates severally the results, and compares them, to see which of these Exchanges will give a more profitable rate than the direct one, viz: 25·20.

The Formulas of calculation are as follows:—

FOR AMSTERDAM.

How many Francs is = £1.

If £1 = 12 Florins.

$$\text{Florins } 100 = 209\frac{1}{4} \quad \text{---} \quad \text{Answer Fs. } 25\cdot17$$

FOR HAMBURG.

£1 = 13/9 Schillinge.

£1 = 13/9 Schillinge.

$$\text{Mk. B. } 100 = 185\frac{1}{2} \text{ Francs.} \quad \text{---} \quad \text{Answer Fs. } 25\cdot16$$

FOR BERLIN.

We need not reset the chain rule,
the calculation being a simple
process of multiplication.

Thaler $6/27\frac{1}{2}$ S. Groschen.

Francs 365

 - - - Answer Fs. $25\cdot24\frac{1}{2}$

FOR VIENNA.

Florins $11\cdot92\frac{1}{2}$

Francs $211\frac{1}{2}$

 - - - " " 25·22

FOR FRANKFORT.

Florins $120\frac{3}{4}$

Francs 209

 - - - " " $25\cdot23\frac{1}{2}$

FOR MADRID.

The formula must here be altered.

? = 240 Pence £1.

If Pence $48\frac{1}{2}$ = 1 Dollar.

Dollars 100 = 509 Francs.

 - - - " " 25·19

FOR LISBON.

? = 240 Pence.

$51\frac{1}{2}$ = 1 Milreis.

100 = 541 Francs.

 - - - " " 25·21

FOR ST. PETERSBURG.

? = 240 Pence.

$32\frac{3}{8}$ = 1 Rouble.

100 = 341

 - - - " " 25·28

FOR BELGIUM.

This is simply a calculation of discount.

Fs. 25·40

Interest 3 per cent. per annum, for 3 Months } 0·19

 25·21

$\frac{1}{16}$ per cent. perte - - 1 $\frac{1}{2}$

" " $25\cdot19\frac{1}{2}$

FOR ITALY.

	Lire 29-10	
Interest 5 per cent. per annum for 3 months.	36	
	28-74	
12 per cent. per cento - -	3-49	
		„ „ 25-25

The Exchanges on Amsterdam, Hamburg, Madrid, and Belgium are therefore worse than the direct Exchange; those on Berlin, Vienna, Frankfort, Lisbon, Italy, and Petersburg, are better, the last of all giving the most favorable return.

Suppose a merchant in London is in expectation of a remittance from Berlin. The Exchange for 3 Months, London, is quoted at the time in Berlin at - - - - Thl. 6/24½ Sg. which, with Interest at, say 3 per cent. per ann. 1½ „

Makes the Short - - - - Thl. 6/26 „

The Quotations in Berlin of Bills on other Towns are at the time—

Amsterdam, 2 Months,	Thlr. 143½ per 250 Florins.
Hamburg „ „	151¼ per 300 Mark.
Paris „ „	81½ per 300 Francs.
Frankfort „ „	56/25 per 100 Florins.
Petersburg, 3 Weeks „	93¼ per 100 Roubles.

Contemporary quotations in London are—

Amsterdam .	3 Months .	12-00
Hamburg .	„ .	13/9½ Sch.
Paris .	„ .	25-32½
Frankfort .	„ .	120½
Petersburg .	• „ .	32¼

A direct comparison of the Exchanges cannot be made here, for the rates in London are at 3 Months, and those given at Berlin are at 2 Months for the first four places, and at 3 Weeks for St. Petersburg. The difference of Interest thus arising must first be balanced, in order to give the right factors for calculation. This can be done

either by reducing all the rates to short, or by bringing them to level time. In the case here before us, it is better to reduce the Berlin Course of Exchange to 3 Months' prices, by deducting the proportion due upon the respective rates of Interest in each place, thus

2 Months' rate less Interest = 3 Months' rate.

Amsterdam	$143\frac{1}{2}$	less 3 per cent.	=	143·14	decimals
Hamburg	$151\frac{1}{4}$	„ $3\frac{1}{2}$ „	=	150·81	„
Paris	$81\frac{1}{2}$	„ $2\frac{1}{2}$ „	=	81·33	„
Frankfort	$56\frac{2}{3}$	„ 3 „	=	56·69	„
3 Weeks' rate.					
St. Petersburg	$93\frac{3}{4}$	„ 6 „	=	92·70	„

When the following comparisons can be made :—

FOR AMSTERDAM.

How many Thaler is = £1.

If £1 = 12 Florins.

Florins 250 = 143·14

————— Answer Thl. $6\frac{1}{26\frac{1}{2}}$ Sg.

FOR HAMBURG.

? = £1.

£1 = $13\frac{1}{9\frac{1}{2}}$ Sch.

300 = 150·81

————— Answer Thl. $6\frac{1}{25}$ Sg.

FOR PARIS.

? = £1.

£1 = $25\cdot32\frac{1}{2}$

300 = 81·33

————— Answer Thlr. $6\frac{1}{26}$ Sg.

FOR FRANKFORT.

? = £1.

£10 = $120\frac{1}{2}$

100 = 56·69

————— Answer Thlr. $6\frac{1}{25}$ Sg.

FOR ST. PETERSBURG.

$$? = 240 \text{ Pence.}$$

$$\text{If Pence } 32\frac{1}{4} = 1 \text{ Rouble.}$$

$$\text{Roubles } 100 = 92\cdot70$$

 Answer Thlr. 6/27 Sg.

He had therefore better order the remitting of Bills on Hamburg or Frankfort, which are cheaper than the others, and which sell better in London.

Suppose a correspondent in Hamburg authorises a London house to draw 3 Months' Bills either upon

Paris, quoted in Hamburg . 187 Francs per 100 Mark.

Amsterdam „ „ „ . 35·45 Florins „ 40 „

Frankfort „ „ „ . 35·30 „ „ „ „

Or upon Hamburg, direct quotations in London being—

Paris, 3 Months 25·30

Amsterdam „ 12/0 $\frac{1}{2}$ Stiver.

Frankfort „ 120·0

Hamburg „ 13/10 Sch.

Upon which place ought the Draft to be made to come cheapest to the Hamburg friend.

FOR PARIS.

$$? = \text{£}1$$

$$\text{£}1 = 25\cdot30$$

$$187 = 100$$

 Answer—Banco Mark 13/8 $\frac{1}{2}$ Sch.

FOR AMSTERDAM.

$$? = \text{£}1$$

$$\text{£}1 = 12\cdot025$$

$$35\cdot45 = 40$$

 Answer Mark 13/9 $\frac{1}{8}$ Sch.

FOR FRANKFORT.

$$? = \text{£}1$$

$$\text{£}10 = 120$$

$$35\cdot30 = 40$$

 Answer Mark 13/9 $\frac{5}{8}$ Sch.

HAMBURG being at

3 months £1 = Banco Mark 13/10 Sch.

Interest at 3 per Cent. $1\frac{1}{8}$

Short = 13/8 $\frac{3}{8}$ Sch.

It is therefore cheapest to draw on Hamburg direct.

Upon the principle illustrated by these examples comparisons can be made between other Courses of Exchange. Operations of this kind are called "Simple Arbitrations."

Merchants and Bankers have frequent occasion to receive or to give orders for Remittances or Drafts. In the cases here illustrated we have assumed that the operations are designed to effect payments for goods or accounts. Banking Commissions are therefore not taken into consideration.

BANKERS' ARBITRATIONS.

The advantages to be gained by the operations illustrated in the preceding paragraph seem to be very small, amounting, as they do occasionally, to as little as $\frac{1}{10}$ th per cent., or $\frac{1}{10}$ th per cent., and, under exceptionally favourable circumstances, to $\frac{1}{4}$ or $\frac{1}{2}$ per cent.; as a rule they are much below $\frac{1}{4}$ per cent. The Trader or Merchant accustomed to profits of 2, 5, 10, and even up to 50 per cent., may perhaps despise these small profits made by Bankers in their transactions. But it must be borne in mind, that the Merchant has to invest his funds in the purchase of goods, which, according to circumstances, it may take a comparatively long time to realise. He may turn over his capital twice or three times a year; and, supposing that all works well, as in the good old times, he may thus—realising an average profit of 5 per cent. each time—make 10 or 15 per cent. per annum. The Banker can turn over his capital much more rapidly, and if he does so fifty or a hundred times in the course of the year, it is clear that a profit of $\frac{1}{4}$ th or $\frac{1}{10}$ th per cent. each time will give him a fair aggregate interest per annum.

The risk of the merchant is, as a rule, limited to single credit transactions, and to the amount involved in these, whereas the Banker, compelled to indorse a great number of Bills in the course of his operations, undertakes risks seemingly quite disproportionate to the amount involved and to the profit made. But this is only a theoretical drawback; for in actual practice the character of these risks is quite different from that of ordinary single credits. In the first place, a very large proportion of Bankers' Arbitrations are carried on in Bullion or Bills at sight, or in other marketable Banking securities; in the second place, the long Paper in which operations are made is considered first-class Paper, and the credit risks involved therein are almost nominal. The local English Banker, who discounts many millions Sterling per annum, undertakes the same class of liability, and in both cases the question of risk incurred and security held rests upon clear, well-understood principles.

On the whole, the character of foreign Bills, often bearing, as they do, a number of first-class indorsements, is superior to that of local Bills; at any rate, such foreign Paper, when payable in London, is the favourite security of discounters here.

Operations in Exchanges are in reality ordinary discount transactions, foreign Bills being used instead of local Bills, and Arbitrations are combined with these operations.

As in the local Discount business, so in the foreign Discount or Exchange business, risks in credits will arise, which, as a question of Insurance, have to be provided for in the average of profits expected.

With these remarks we will here again dismiss the consideration of credit value, as a matter quite distinct from the subject of Arbitrations.

Arbitrations of Exchanges then constitute a rather important part of the foreign Banker's business, both here and abroad. He watches the rates of Exchange, the prices of Bullion, and of Marketable Banking Securities in the different large commercial and financial centres. If on comparing the rates he finds that a certain description of Exchange is dearer in one place than in another, he buys in the cheaper and sells in the dearer of the two. The business is

promptly done, and a small profit realised on it. The operation has this important effect, moreover, that it tends to adjust the differences in the Rates of Exchange resulting from the balance of trade, and to even the variations in the prices of all sorts of monetary values and securities arising from ordinary or extraordinary causes.

The Banker's indispensable requisities for conducting operations of this kind successfully are—

A fair Capital, and first-class credit; the latter being even of still higher importance to him than the former.

Proper arrangements with correspondents of equally good financial standing in the great commercial and financial centres.

A well-digested general plan of action devised to effectually maintain and control, with the least expenditure of time and trouble, the intricate technicalities involved in the endless considerations and ever-varying figures attendant upon such complicated operations as Compound Arbitrations are.

The command of a sufficient Capital is necessary, to enable the Banker to make purchases for Cash at the shortest notice; but a first-class credit is still more important, as Short or Long Drafts by one correspondent on another play the most prominent part in the Banker's Exchange and Arbitration business, and it is indispensable that the financial position of the operator—both for the purchase and sale of Bills—should be such as to enable him to command the most favorable Exchanges.

The arrangements with correspondents in the leading commercial and financial centres must be based upon most economical principles. The usual banking commission of $\frac{1}{8}$ to $\frac{1}{4}$ per Cent. is too heavy to admit of more than occasional and exceptional transactions. It is therefore customary, between large houses which have agreed upon Arbitrations, to charge no commission to each other, but to work on joint account for profit. All the charges attendant on business of this kind are cut down as low as possible, as the watchful and energetic competition from all sides tends to reduce the margin to a very narrow compass, and

the utmost economy has to be practised, to leave a small profit on the transaction.

This same competition compels also the utmost vigilance in looking out for business, and the greatest promptness of action in conducting it. The telegraph now-a-days flashes news and quotations with lightning speed in all directions, and where operations promise to leave a profit margin those whose orders arrive first reap the benefit of that margin. So we clearly see that high personal intelligence and prompt action are elements as necessary to the success of financial operations as capital and credit are.

In a work of this kind we can do little more than give some practical hints in reference to the technical part of the business. In a former part of this chapter it has been shown how comparisons of direct Exchanges are made. To the Banker these are familiar matters. He deals with them by a system of rapid mental calculation of per centages, by which he at once reduces the several rates to "short," to see which of the Exchanges will best suit his purpose.

For indirect rates, or so called simple arbitrations, tables are computed, ranging between practicable limits, from which the indirect Exchange may be picked out at a glance. The method of computing and using such tables varies according to convenience and fancy.

BETWEEN LONDON AND PARIS.

The best course to pursue is to draw up a general list headed by the short rates of Exchange between London and Paris, except the leading column, which gives the Paris rates of Exchange on the third place. The Arbitration between these rates gives the net price of the Exchange in Paris, expressed in the way in which they are quoted in London.

The whole of the Paris Course of Exchange may be reduced in this manner. We select the Amsterdam and the Madrid Exchanges as samples of the system.

Amsterdam is quoted :—

In Paris ? Francs per 100 Florins.

In London £1 = ? Florins.

Madrid :—

In Paris 100 Dollars = ? Francs.

In London 1 Dollar = ? Pence.

Price of 3 Months' Amsterdam in Paris.	FOR AMSTERDAM.—SHORT RATE BETWEEN LONDON AND PARIS.								
	25·10	25·12½	25·15	25·17½	25·20	25·22½	25·25	25·27½	25·30
208½	12,038	12,050	12,062	12,074	12,086	12,098	12,110	12,122	12,134
208½	12,031	12,043	12,055	12,067	12,079	12,091	12,103	12,115	12,127
208½	12,024	12,036	12,048	12,060	12,072	12,084	12,096	12,108	12,120
208½	12,017	12,029	12,041	12,053	12,065	12,077	12,089	12,100	12,112
209	12,010	12,022	12,034	12,045	12,057	12,069	12,081	12,093	12,105
209½	12,003	12,015	12,027	12,038	12,050	12,062	12,074	12,086	12,098
209½	11,995	12,007	12,019	12,031	12,043	12,055	12,067	12,079	12,091
209½	11,988	12,000	12,012	12,024	12,036	12,048	12,060	12,072	12,084
209½	11,981	11,993	12,005	12,017	12,029	12,041	12,053	12,064	12,076
209½	11,973	11,985	11,998	12,010	12,021	12,033	12,045	12,057	12,069
209½	11,966	11,978	11,990	12,002	12,014	12,026	12,038	12,050	12,062
209½	11,960	11,971	11,983	11,995	12,007	12,019	12,031	12,043	12,055
210	11,952	11,964	11,976	11,988	12,000	12,012	12,024	12,036	12,048
210½	11,945	11,957	11,969	11,981	11,993	12,005	12,017	12,029	12,040
210½	11,938	11,950	11,962	11,974	11,986	11,998	12,010	12,022	12,033
210½	11,931	11,943	11,955	11,967	11,979	11,990	12,002	12,014	12,026
210½	11,924	11,936	11,948	11,959	11,971	11,983	11,995	12,007	12,019
210½	11,917	11,929	11,941	11,952	11,964	11,976	11,988	12,000	12,012
210½	11,910	11,922	11,934	11,945	11,957	11,969	11,981	11,993	12,005
210½	11,903	11,915	11,926	11,938	11,950	11,962	11,974	11,986	11,998
211	11,896	11,907	11,919	11,931	11,943	11,955	11,967	11,979	11,991
211½	11,889	11,900	11,912	11,924	11,936	11,948	11,960	11,972	11,984
211½	11,882	11,893	11,905	11,917	11,929	11,941	11,953	11,965	11,977
211½	11,875	11,886	11,898	11,910	11,922	11,934	11,946	11,957	11,969
211½	11,867	11,879	11,891	11,903	11,915	11,927	11,939	11,950	11,962

The rule for the calculation has already been given.

Price of 3 Months' Madrid in Paris.	FOR MADRID.—SHORT RATE BETWEEN LONDON AND PARIS.										
	25·10	25·12½	25·15	25·17½	25·20	25·22½	25·25	25·27½	25·30	25·32½	25·35
515	49·24	49·19	49·15	49·10	49·05	49·00	48·95	48·90	48·85	48·81	48·76
514½	49·20	49·15	49·10	49·05	49·00	48·95	48·90	48·85	48·81	48·76	48·71
514	49·15	49·10	49·05	49·00	48·95	48·90	48·86	48·81	48·76	48·71	48·66
513½	49·10	49·05	49·00	48·95	48·90	48·86	48·81	48·76	48·71	48·66	48·62
513	49·05	49·00	48·95	48·91	48·86	48·81	48·76	48·71	48·66	48·62	48·57
512½	49·00	48·96	48·91	48·86	48·81	48·76	48·71	48·66	48·62	48·57	48·52
512	48·96	48·91	48·86	48·81	48·76	48·71	48·67	48·62	48·57	48·52	48·47
511½	48·91	48·86	48·81	48·76	48·71	48·67	48·62	48·57	48·52	48·47	48·43
511	48·86	48·81	48·76	48·71	48·67	48·62	48·57	48·52	48·47	48·43	48·38
510½	48·81	48·76	48·72	48·67	48·62	48·57	48·52	48·47	48·43	48·38	48·33
510	48·76	48·72	48·67	48·62	48·57	48·52	48·48	48·43	48·38	48·33	48·28
509½	48·72	48·67	48·62	48·57	48·52	48·48	48·43	48·38	48·33	48·28	48·24
509	48·67	48·62	48·57	48·52	48·48	48·43	48·38	48·33	48·28	48·24	48·19
508½	48·62	48·57	48·52	48·48	48·43	48·38	48·33	48·28	48·24	48·19	48·14
508	48·57	48·53	48·48	48·43	48·38	48·33	48·29	48·24	48·19	48·14	48·09

The rule for the calculation has already been given.

Now if the price of three months' Amsterdam in London is Fl. 11/19½ Stiver—in Decimals 11·975—the price of the same Exchange in Paris 211½, the short rate between London and Paris 25·15, a glance at the table will at once show that the arbitrated net rate in Paris is 11·912. Amsterdam is consequently cheaper in London than in Paris by ·063 Cents, equal to 5 per mille. Again, if the short rate between London and Paris is 25·25, Amsterdam being quoted in London at 12·00, in Paris at 209½, the table will give the arbitrated net rate in Paris as 12·06, which is ½ per cent. cheaper than in London.

But we have to take into account the fluctuations of the Exchanges and the charges upon the transaction.

The quotations are not made at fixed rates, as assumed in the table—the rate for Amsterdam, for instance, may be given as 11/19½ St. to 12/00, and the quotation in Paris may be 211 à 211½. The selection of the rates that may be fairly depended upon for profitable business transactions is a matter in which the operator must be guided by experience, and by his knowledge of the customs and practice severally obtaining at the respective places, assisted by such special facilities as the position of his house may afford him. As a matter of theory, the so-called *Medium* rate—that which lies between the two extremes of quotation—may frequently be taken as the one at which business can safely be done, with a fair prospect of profit.

The charges generally are—

⅓ per cent. Brokerage in London ;
 ⅓ per cent. Brokerage in Paris, for sale of Bills ;
 ⅓ per cent. Brokerage in Paris, for return Remittance ;
 ⅓ per cent. Bill Stamp in London—making in all 4 per mille on the transaction ; if the margin shown in the table does not afford more than ample allowance for this aggregate of charges, the operation is not practicable. We have assumed here that the business is carried on by firms operating on joint account, without charge of Banking Commission. Such firms are often in a position to remit to each other without Brokerages, and to reduce the charges to be taken into account to 3 or 2½ per mille and less ; however, 4 per mille may be taken as the full aggregate of charges on Arbitrations.

If the price of Three Months' Bills on Madrid is 48¾ Pence in

London, 514 Francs in Paris, and Short between London and Paris 25·12½, the table gives the rates for Madrid in Paris—

At	49·100
Deducting charges, 4 per mille	·196
	48·904

The London rate being 48·750

A Profit of 0·154 Penny,

or about 6s 4d per cent., would be the result of remitting Madrid to Paris.

Madrid quoted in Paris at 511, in London at 48½ Pence, and Short Paris at 25·32½, the rate resulting would be 48·430

Add charges, 4 per mille	0·194
	48·624

Which, compared to the price of Madrid in

London, = 48·750

Leaves a margin of 0·126 Penny,

or about 2½ (2⅞) per mille.

TABLE OF PRICES OF AMSTERDAM BETWEEN LONDON AND BERLIN.

2 Months' Amsterdam at Berlin.	LONDON AND BERLIN.—SHORT RATE BETWEEN LONDON AND BERLIN.							
	6/23½	6/24	6/24½	6/25	6/25½	6/26	6/26½	6/27
143	11,859	11,888	11,917	11,946	11,975	12,005	12,034	12,063
143½	11,849	11,878	11,907	11,936	11,965	11,994	12,023	12,052
143½	11,838	11,867	11,896	11,925	11,955	11,984	12,013	12,042
143½	11,828	11,857	11,886	11,915	11,944	11,973	12,002	12,031
143½	11,818	11,847	11,876	11,905	11,934	11,963	11,992	12,021
143½	11,807	11,836	11,865	11,894	11,923	11,952	11,981	12,010
143½	11,797	11,826	11,855	11,884	11,913	11,942	11,971	12,000
143½	11,787	11,816	11,845	11,874	11,903	11,932	11,961	11,989
144	11,777	11,805	11,834	11,863	11,892	11,921	11,950	11,979
144½	11,766	11,795	11,824	11,853	11,882	11,911	11,940	11,969
144½	11,756	11,785	11,814	11,843	11,872	11,901	11,929	11,958
144½	11,746	11,775	11,804	11,833	11,861	11,890	11,919	11,948
144½	11,736	11,765	11,793	11,822	11,851	11,880	11,909	11,938

The rule for the calculation is—

$$\begin{aligned} ? \text{ Florins} &= \text{£1 Sterling.} \\ \text{If £1 Sterling is} &= 6/23\frac{1}{2} \text{ Sg.} \\ \text{Thaler 143} &= 250 \text{ Florins.} \end{aligned}$$

Answer 11·859 Florins.

In this Table the 2 months' Exchange on Amsterdam is quoted in Berlin, whilst London quotes the 3 months' rate. To adjust the London to the Berlin price, 1 month's interest has to be taken into account; and as this additional month makes Amsterdam cheaper, this interest must be added to the London Exchange; which makes,

At 2 per cent. per annum, an addition of 0·020				
„ 2 $\frac{1}{2}$	„	„	„	0·025
„ 3	„	„	„	0·030
„ 3 $\frac{1}{2}$	„	„	„	0·035
„ 4	„	„	„	0·040
„ 5	„	„	„	0·050
&c., &c.				

Charges for Brokerage, &c., are the same as before.

A complete set of Tables, embracing all the different Courses of Exchange, may thus be constructed for comparison with the London Course. The operations contemplated in these Tables are usually called Simple Arbitrations. In Compound Arbitrations the operation embraces more than three places of Exchange.

Thus, finding that Amsterdam is cheaper in Paris than in London, the London house may order from Paris a supply of Amsterdam for its own market, and, instead of remitting Bills on Paris in return, or authorising drafts, it may, finding that Bills on Paris are cheaper in Hamburg than in London, cause Hamburg to cover Paris by a remittance from there; Hamburg may be covered in its turn by a direct remittance. These operations constitute a Compound Arbitration. Or, should the price of Bills on St. Petersburg be more favorable (higher) in Hamburg than in London, the London firm may cover Hamburg by a remittance on St. Petersburg, which would change this operation from Compound Arbitration to what is technically called "Circuitous Arbitration."

Similar Tables may be constructed upon the same plan for comparison with the Course in other important Centres of Exchange.

By way of illustration we give the subjoined Table, showing the price between Hamburg and Paris of Bills on Amsterdam.

Price of 3 Months Amsterdam in Hamburg	SHORT RATE BETWEEN HAMBURG AND PARIS.							
	185½	185½	185½	186	186½	186½	186½	186½
35·40	209½	209½	210	210½	210½	210½	210½	210½
35·42	209½	209½	209½	210	210½	210½	210½	210½
35·44	209½	209½	209½	209½	210½	210½	210½	210½
35·46	209½	209½	209½	209½	210	210½	210½	210½
35·48	209½	209½	209½	209½	209½	210	210½	210½
35·50	209½	209½	209½	209½	209½	209½	210	210½
35·52	209	209½	209½	209½	209½	209½	209½	210
35·54	209	209½	209½	209½	209½	209½	209½	209½
35·56	208½	209	209½	209½	209½	209½	209½	209½
35·58	208½	208½	209	209½	209½	209½	209½	209½
35·60	208½	208½	208½	209	209½	209½	209½	209½

The rule for the calculation is—

? Francs = 100 Florins.

If Florins 35·40 = 40 Mark Banco.

If Mark Banco 100 = 185½ Francs.

Answer 209½ Francs.

In reality, however, Compound or Circuitous Arbitrations are only two or more Simple Arbitrations strung together; the opportunities for effecting operations of this kind are rare, for the plain reason that there is no possible monopoly of information in the matter, and that the resident firms in the several foreign Centres of Exchange know the opportunities offering for profitable speculation in arbitration as soon and sooner even than any one given firm in another place can know them; and so the chances generally are that the temporary differences in the rates will be adjusted before the operation can be carried to a successful and profitable end.

It may indeed be easily conceived that temporary differences in the rates, dependent as they are upon supply and demand, cannot be taken advantage of to an unlimited extent. A remittance of £10,000, and its sale on the market of a small Exchange town, will

lower the price at once; even in London purchases or sales to the amount of £20,000 or £30,000 have a sensible effect upon certain Exchanges. Occasionally, however, when there is a current of Bullion floating, the differences in the rates will keep up somewhat longer, so as to permit larger and more important operations.

Arbitrations of Exchanges may be combined with Stock Exchange operations, i.e. purchase and sale of Stock, Securities, &c. The variations in the prices of Foreign Funds, Railways, &c., between two places are taken advantage of for either selling or buying, upon the same general principle upon which Arbitrations of Exchanges are based.

As an illustration of the system we select, for instance, the Lombard Railway Shares (called in England the South Austrian and Lombardo-Venetian). These Shares are nominally worth Fs. 500 or £20; but at the present time (March 1868) the price in London ranges from £14½ to £14¾, in Paris from Fs. 373 to Fs. 376. Transactions in selling and buying in both Cities are effected for the *settling* days in the middle and at the end of each month.

At the Exchange of Fs. 25·17½ per £, Fs. 373 are equal to £14 16s 4d, so that £14 10s or £14 12s 6d would leave a margin for sale in Paris.

To facilitate calculation, a Table may be constructed upon the plan here subjoined:—

Price in Paris.	367	368	369	370	371	372	373	374	375	376	377
Price in London.											
14½	25·31	25·38	25·45	25·52	25·59	...	...	...	...	...	...
14¾	25·09	25·16	25·23	25·30	25·37	25·44	25·50	25·57	...	...	...
14½	24·88	24·95	25·02	25·09	25·16	25·23	25·30	25·37	25·44	25·50	25·57
14¾	...	...	...	24·87	24·94	25·01	25·08	25·15	25·21	25·28	25·35
15	...	...	...	...	...	...	24·87	24·94	25·01	25·08	25·15

This Table can of course be extended to suit all possible fluctuations in the price of the shares.

The Charges for Brokerage here and in Paris, and the Brokerage on the Exchange must be taken into account; also the Cost of forwarding the Stock, unless the latter item be avoided through

a counter operation. These charges may in the aggregate make a difference of $\frac{1}{10}$ ths per cent. or about 10 Centimes on the Exchange. (Operators always endeavour to economise charges by special arrangements.)

Differences in the manner of valuing and quoting Stock in two different places tend to complicate Arbitration operations in such Stock.

The United States $\frac{5}{8}$ Bonds, for instance, are valued in London at the old American Exchange—4s 6d per Dollar. The dividends of 6 per cent. per annum, which are paid half-yearly, fall due on the 1st May and 1st November, and the price in London rises or falls with the accruing of these dividends, standing highest just before, and lowest just after the 1st May and 1st November.

In Frankfort-on-the-Maine, on the other hand, the Dollar is taken at $2\frac{1}{2}$ Florins, which at £10 = 120 Florins, gives 4s 2d per Dollar; when sales are effected, the actual interest due on the Coupon up to the date of delivery is added to the amount.

To compare, therefore, the London price with the Frankfort price, this interest has first to be added to the latter. Thus, supposing the price in Frankfort to be, on the 15th June 75

There has accrued one-and-a-half months'

interest at 6 per cent. per annum, which

makes on 100 Dollars 0.75 Dollar to be paid

extra, or 1 Dollar upon the price of 75 . 1

The actual value being thus 76 per 100 Dollars

The price in London at the same time may be $70\frac{1}{2}$, at 4s 6d per Dollar.

The calculation on the Exchange would therefore stand :—

? Florins = 200 Shillings (£10.)

If Shillings $(4/6) 4.5 = 1$ Dollar.

London Dollars $70.5 = 100$ nominal.

Nominal „ 100 = 76 in Frankfort.

Frankfort Dollar 1 = 2.5 Florins.

Answer $119\frac{1}{2}$ Florins.

Two sets of Tables are accordingly required here—viz., one Table giving the price at Frankfort, with the interest added thereto, as here subjoined :—

VALUE AT DIFFERENT PERIODS, INCLUDING INTEREST.

Price in Frankfort.	1 May 1 Nov.	15 May 15 Nov.	1 June 1 Dec.	15 June 15 Dec.	1 July 1 Jan.	15 July 15 Jan.	1 Aug. 1 Feb.	15 Aug. 15 Feb.	1 Sept. 1 March	15 Sept. 15 March	1 Oct. 1 April	15 Oct. 15 April	1 Nov. 1 May
75	75	75½	75½	76	76½	76½	77	77½	77½	78	78½	78½	79
75½	75½	75½	75½	76½	76½	76½	77½	77½	77½	78½	78½	78½	79½
75½	75½	75½	75½	76½	76½	76½	77½	77½	77½	78½	78½	78½	79½
75½	75½	75½	76	76½	76½	77	77½	77½	78	78½	78½	79	80½
75½	75½	75½	76½	76½	76½	77½	77½	77½	78½	78½	78½	79½	79½
75½	75½	76	76½	76½	77	77½	77½	78	78½	78½	78½	79½	79½
75½	75½	76½	76½	76½	77½	77½	77½	78	78½	78½	79	79½	79½
75½	75½	76½	76½	76½	77½	77½	77½	78½	78½	78½	79½	79½	79½
76	76	76½	76½	77	77½	77½	78	78½	78½	79	79½	79½	80
76½	76½	76½	76½	77½	77½	77½	78½	78½	78½	79½	79½	79½	80½
76½	76½	76½	76½	77½	77½	77½	78½	78½	78½	79½	79½	80½	80½
76½	76½	76½	77	77½	77½	78	78½	78½	79	79½	79½	80	80½
76½	76½	76½	77½	77½	77½	78½	78½	78½	79½	79½	79½	80½	80½
76½	76½	77	77½	77½	77½	78½	78½	78½	79½	79½	79½	80½	80½
76½	76½	77½	77½	77½	78	78½	78½	79	79½	79½	80	80½	80½
76½	76½	77½	77½	77½	78½	78½	78½	79½	79½	72½	80½	80½	80½
77	77	77½	77½	78	78½	78½	79	79½	79½	80	80½	80½	80½

And another Table showing the Arbitrated Rates of Exchange resulting from the prices in Frankfort and the prices in London.

Price in Frankfort.	PRICE IN LONDON.													
	70	70½	70½	70½	70½	70½	70½	71	71½	71½	71½	71½	71½	71½
75	119	118½	118½	118½	118½	118	117½	—	—	—	—	—	—	—
75½	119½	119	118½	118½	118½	118½	118	—	—	—	—	—	—	—
75½	119½	119½	119	118½	118½	118½	118	—	—	—	—	—	—	—
75½	119½	119½	119½	119	118½	118½	118½	118	—	—	—	—	—	—
75½	119½	119½	119½	119½	119	118½	118½	118½	118	—	—	—	—	—
75½	120	119½	119½	119½	119½	119	118½	118½	118½	117½	—	—	—	—
75½	120½	120	119½	110½	119½	119½	119	118½	118½	118½	118½	117½	—	—
75½	120½	120½	120	119½	119½	119½	119½	118½	118½	118½	118½	117½	—	—
76	120½	120½	120½	120	119½	119½	119½	119½	118½	118½	118½	118	117½	—
76½	120½	120½	120½	120½	120	119½	119½	119½	118½	118½	118½	118½	118½	117½
76½	121	120½	120½	120½	120½	120	119½	119½	119½	118½	118½	118½	118½	117½
76½	—	121	120½	120½	120½	120½	119½	119½	119½	119½	118½	118½	118½	118½
76½	—	—	121	120½	120½	120½	119½	119½	119½	119½	119	118½	118½	118½
76½	—	—	—	121	120½	120½	120½	120½	119½	119½	119½	119½	119	118½
76½	—	—	—	—	121	120½	120½	120½	120	119½	119½	119½	119½	118½
77	—	—	—	—	—	121	120½	120½	120½	120	119½	119½	119½	119

These Tables may be extended to suit all possible variations in the price of the Bonds.

They enable the operator to judge at a glance, in comparing the prices in London and in Frankfort, whether there is a profit to be realised in selling here and buying there, or *vice versâ*, duly allowing, of course, for the charges of Brokerage, Forwarding, &c., in either direction, as experience will have taught him. The Exchange for Short Bills (running up to settling days) between the two places forms another factor in the calculation.

Rapid interchange of telegraphic advices, and prompt decision and action, are indispensable to enable the operator to take advantage of the Markets, and to effect and close transactions successfully at once, without laying himself open to the chances of a speculation in Stocks. It is necessary, however, to invest a certain amount of capital in the securities in question, so as to be able to furnish Stock when required.

Business of this kind is therefore generally undertaken by Houses specially engaged in this line, and possessed of the requisite experience to deal with the many chances and contingencies attendant on this class of operations.

The information conveyed in this section will suffice to explain the theory of operations in Arbitration, whilst the tables given will serve as models in the business.

CHAPTER IX.

INFLUENCES AFFECTING THE EXCHANGES.

THE influences which affect the Exchanges are many and varied. It is impossible to combine and work them into a general system that might serve as the ground-work for establishing some intelligible comprehensive principle to guide us to a proper understanding of the Exchanges and their mechanism and fluctuations, so as to enable us thus to foresee and forestall the latter. Statistics have, indeed, been most industriously and diligently collected, and Tables have been carefully compiled, showing the fluctuations of the Exchanges in their several phases, and tracing them to the causes that have chiefly produced them. But, however valuable these tables unquestionably are as contributions to the statistics of the subject, they would not serve us much in our attempts to foresee and foretell future fluctuations of a similar nature; for the maxim that the same causes will produce the same effects does not apply here, as the times at which, and the conditions and circumstances under which these causes are operating are never wholly alike in any two periods; and as there are always a number of modifying and disturbing influences at work in the matter

tending to produce new combinations totally different from those to which the tables of the fluctuations of Exchanges refer.

In certain special cases, indeed, where we have before us some extraordinary contingency, such as an exceptionally abundant harvest, or a grievous failure of the crops, or some great political movement or event, the effect which such a contingency is likely to have upon certain Exchanges may be foreseen and predicted, to a great extent, at least; but here again the misfortune is that the effect produced is so closely coincident with the event that very little time is afforded for prediction.

The term *Exchanges*, or *Foreign Exchanges*, is looked upon by many as meaning simply exchanges between the respective Coins or Currencies of different countries. This is a grievous error, as it leaves entirely out of account the most material and essential feature of the question—viz., the element of international indebtedness. For the sake of simplifying matters, we will at once dismiss here from consideration the so-called *Rates of Exchange*, resulting from the diversities of the existing Monetary Systems. In so far as the real question of the Exchanges is concerned, it matters very little indeed whether we have to deal with £ Sterling, or Francs, or Dollars, or any other Currency, as the relations of value which these Coins bear to each other are altogether a matter of a technical nature, which has been already thoroughly exhausted in the preceding parts of this volume. So we will, for greater clearness and simplicity's sake, proceed here as if there existed

no different Currencies ; in fact, as if the Universal Coinage had already been fully introduced and adopted everywhere. Let us assume the £ Sterling to be the Universal Unit, as being the most familiar Coin to the reader. Upon this assumption there will be an end at once, of course, in so far as the principal subject of our consideration here is concerned, to the present so-called Rates of Exchange, as resulting from the diversities of the existing Monetary System. This, however, will only enable us to simplify the mode of expressing the Rates of Exchange ; it cannot act in any way upon the circumstances which influence the rise and fall of the Exchanges. Australia shows a case in point ; the Monetary System is the same there as in England, yet the Exchange with the mother country is either at a Premium or at a Discount. These very terms, *Premium* and *Discount*, which figure now as items in the calculation of the Rates of Exchange, will also serve to express the variations in the Exchanges with other countries, so soon as the projected Universal Coinage System shall be generally adopted. The per centage of this Premium or Discount will range within the limits of the cost and charges for forwarding Hard Cash from the one country to the other, but it will not exceed these limits.

An absolute universal Parity of the Exchanges between the different countries cannot well be expected to come to pass in this World, such as it is constituted now. It is with nations the same as with corporations, with corporations as with firms, and with firms as with individuals ; they may all alike be looked upon

as Members of a Community, acting together in common, indeed, and on terms of amity ; yet, nevertheless, all of them competitors and rivals in the great race for wealth, and accordingly with a settled antagonism between them. The chances of success in this race depend, in the case of nations the same as in that of individuals, upon the intelligence, industry, order, and economy which each competitor brings to bear upon it. Those Nations which best understand and practise most successfully the sound doctrines of political economy may be said to resemble well regulated and properly-conducted commercial and industrial establishments, that manage to balance their annual accounts with a surplus in their favor at the end of the year. To proclaim that England stands first and foremost among Nations in this respect, would be simply to utter the tritest truism. The wealth and power of Great Britain must unquestionably be attributed, in some measure, to her great political successes, but it is due certainly in a much higher degree still to her vast spirit of industrial and commercial enterprise, and to the maxims of sound economy, equally removed from parsimony as from extravagance, which is practised by the Nation at large.

Look to Spain and Italy, on the other side, and compare their position with that of Great Britain. The foreign trade of the latter country amounts to £10 a year per head of the population, whilst that of Italy is only £1 12s, and that of Spain only £1 1s per head. Yet surely both Italy and Spain are countries not inferior, to say the least of it, to England in

natural advantages. They have both a proud history behind them, and they have had their period of power and wealth; yet, how wretchedly inferior is their present position! How wofully they are lagging behind most other European Nations in industry and commerce! The people seem to be indolent and slothful, as there appears to be no sufficient energy in them to organise a system of productive industry, such as constitutes the foundation of the wealth and well-being of other Nations. They are clearly extravagant also in their spendings; and the sound principles of Political and Social Economy seem to be but little understood and practised by them, for we find the Balance of Trade going constantly against them. The Credit of the two countries is at a very low ebb, and the Exchanges are perpetually against them. There are other countries more or less in a similar plight—Russia, to wit, and Turkey, and the South American Republics.

France, Germany, and Belgium rank next to Great Britain in trade, industry, and national wealth. The progress made by these countries in these respects during the last twenty years is truly astonishing. Some twenty years ago the Exchanges were constantly against them, whilst now we find them usually in their favor, even the Exchange with England. In fact, in the great race for wealth, though these countries have not yet attained to England's high position, they have been of late fast gaining upon her.

In the United States of North America, on the contrary, we have an instance of retrogression, not

altogether imputable to the late Civil War; for it was a notorious fact before that time that the people of the States had exceeded the bounds of prudence, by importing a larger share of luxuries for their consumption and enjoyment than their exports could possibly warrant, and that they had in thus far been departing from the sound principles of Political and Social Economy. With the proved energy of the American character, the vast intelligence and industry of the American people, and their unbounded spirit of enterprise, it may, however, safely be affirmed that they are sure to recover the ground lost by them sooner than other Nations could expect to accomplish it, and they will speedily appear again among the foremost in the race.

It may be laid down as a general rule that, in proportion as a Nation advances in intelligence and industry, and cultivates a better and clearer understanding of the true principles of Political and Social Economy, and gives them a wider and a more rigorous application, so will its wealth and well-being improve, and so, consequently, will the Exchanges turn in its favour.

Let it be distinctly understood, however, that when we speak here of the *Exchanges turning in favour or against a country*, or *being favourable or unfavourable to it*, we always mean the averages of the Exchanges generally, and not simply some special Exchanges, which cannot be guiding in this respect. Thus, for instance, the Exchange between England and France may for a long period keep unfavourable to England,

owing either to the condition of the direct trade between the two countries telling against England in this much that she imports more largely from France than the latter country imports from her, or to some indirect cause; whilst the Exchanges generally, taken in the aggregate, may be altogether favourable to England.

Again, when we talk of the Balance of Trade, and say that it is in favour of one country, or that it is against some other country, there is an error very commonly committed, which consists in looking upon the matter as a mere question of import and export, and assuming that the country which has supplied to another country commodities to a larger value than it has received from that same country, has the balance of trade in its favor. It must be admitted that, at the first blush, this looks like a perfectly natural and rational conclusion. A has supplied B with goods to the value of £1000,—B in return has supplied A with goods to the value of £800 only, and B accordingly owes £200 to A. However, as we shall have occasion to show, the Balance of Trade is not merely the result of an interchange of commodities between Nations; it is not simply the excess of imports over exports, or *vice versâ*, on one side or the other; but there are many other elements to be taken into account in the matter, which give a much wider meaning and application to the term.

The subjoined Table, taken from Martin's Year Book, 1868 (5th Edition—MacMillan & Co.) gives the returns of the Imports and Exports of the various countries:—

COMMERCE OF THE PRINCIPAL COUNTRIES.

Countries.	Value of Total Imports.	Value of Total Exports.
IN EUROPE :—	£	£
Austria	24,000,000	31,000,000
Belgium	50,000,000	47,000,000
Denmark	4,500,000	3,000,000
France	137,000,000	158,000,000
Germany	150,000,000	140,000,000
Great Britain and Ireland .	295,000,000	239,000,000
Greece	2,000,000	1,000,000
Italy	39,000,000	28,000,000
Netherlands	36,000,000	30,000,000
Russia	25,000,000	25,000,000
Spain	17,000,000	12,000,000
Sweden and Norway . . .	9,000,000	9,000,000
IN AMERICA :—		
Argentine Republic . . .	5,000,000	3,000,000
Brazil	12,000,000	15,000,000
Canada	16,000,000	13,000,000
Chili	5,000,000	6,000,000
Peru	4,000,000	6,000,000
United States	80,000,000	55,000,000
IN ASIA :—		
Ceylon	5,000,000	4,000,000
China	45,000,000	34,000,000
India.	50,000,000	70,000,000
IN AUSTRALASIA :—		
New South Wales	10,000,000	8,000,000
New Zealand	6,000,000	3,500,000
Queensland	2,500,000	1,250,000
South Australia.	3,000,000	3,000,000
Tasmania	1,000,000	1,000,000
Victoria	14,000,000	13,500,000

Great Britain, we see, figures in this Table* for—

Value of Imports in 1866	£295,000,000
„ Exports „	£239,000,000

Showing an excess of Imports over Exports of £54,000,000

which certainly looks a rather awkward Balance *against* us.

The Bullion business of this country for the same period was returned :

Imports for 1866	£34,287,139
Exports „	£21,638,611

Showing a Balance of . . . £12,648,528

Bullion retained in the country.†

* This return, issued by the Custom House, only refers to Goods and Produce passing in and out of the country.

† The Bullion Statistics are kept separate. As regards these latter, an annual error of some £3,000,000 has to be taken into account here (see page 254). We take this opportunity also to remark that the above import and export statistics do not seem quite accurate in the estimated value assigned to the goods, as may easily be shown by adding together the imports and the exports of all countries, when the former will show a gross aggregate of £1,047,000,000, the latter of £959,250,000, and accordingly a total excess of imports over exports of £87,750,000. If this excess be equitably divided among the different countries concerned, the apparent balance against some of them, Belgium for instance, will disappear, whilst in the case of some other countries, England for instance, it will be considerably reduced. Another item for consideration in this matter is that the Custom House valuation of the imports into England does not give the actual amount to be paid for the goods imported, the same as the merchant's valuation of the exports from England does not show the amount actually realised by the goods exported, for which payment is received here. These returns, therefore, cannot be considered conclusive evidence of the above large balance against England.

At first sight it may not appear easy to reconcile these two returns with each other. We find, on the one side, that we have imported £54,000,000 worth more Goods than we have exported, which, upon the general vulgar notion of the Balance of Trade, would require to be covered by an equivalent amount of Bullion, to be supplied and exported by us. It is self-evident that, if this were truly the case, an annual drain of Bullion to such a formidable extent as this would in a very few years impoverish and ruin us. Whereas, on the other side, we find that, so far from our having to sustain this drain, we actually retain, out of the Bullion passing through the country, a Balance of £12,648,528 in our hands. How is this apparent contradiction to be explained? The explanation is very simple. It is, as stated before, that the excess of Imports over Exports, or *vice versâ*, does *not* constitute the *true* Balance of Trade. England has a great many other resources besides her export trade. She possesses a large Capital, the fruit of many years intelligent Industry and prosperous Commerce, which, besides affording ample funds for all enterprises at home, is invested to a very considerable amount in numerous undertakings and speculations abroad, which yield a gross aggregate of profits, coming to this country in a variety of ways, more than sufficient to cover the great excess of foreign produce consumed by us over and above what our exports would seem to warrant.

The most important investments of this kind, which England has made abroad, may be classed under the following five heads, to wit :

1. Foreign State Loans held by English Capitalists, on which large sums have to be periodically remitted to the holders for interest, in Coupons payable either here or abroad.

2. Investments in Foreign Railways and Mines,* and numerous other enterprises, yielding interest and dividends in the same way to the English Capitalists.

3. Use of English Capital and English Commercial Credit in all sorts of business transactions, directly or indirectly connected with this country, or carried on between other countries through English mediation, from which profit is derived in the shape of Commission, Premiums of Insurance, and otherwise.

4. The large Mercantile Navy of England, which makes this country the principal Carrier, not only for the British Trade, but also for the Trade between many other Nations. This yields considerable annual returns for freight to the English ship owners.

* It may be almost needless to remark here that the large investments of Capital in the English National Debt and in British Railways and other Home enterprises are matters which have no connection with the Country's foreign intercourse. Still we may point out, as a most important feature in the matter, in so far as international indebtedness is concerned, that England holds nearly the whole of her own State Debt and Railway Stock, a very small proportion indeed of these securities being held abroad; whereas English Capitalists are holders of almost every kind of Foreign Stock, even of a certain amount of French Rentes and a great deal of French Railway Stock. German Stock alone forms an exception from the rule, being held exclusively in Germany.

5. A variety of other investments too numerous to specify, but partaking all of them more or less of the character of the investments enumerated under the preceding four heads. We may, however, include under this head the Capital, Enterprise, and Industry, which British Merchants, Artisans and Farmers, &c., settled abroad, devote to their several undertakings, and by which they realise fortunes to be enjoyed ultimately in the old country. We mention this last item here, as it may, in a measure, pass for a set-off against the somewhat profuse expenditure of British Absentees and Travellers abroad, which certainly involves a large annual loss of Bullion to the country, and influences in thus far the Balance of Trade unfavourably against us.

The position of Great Britain, commercially and financially, may thus be compared to that of a wealthy mercantile firm, with part of its capital engaged in industrial enterprises and trade of its own, and another large portion put out at interest, and which can therefore afford to indulge in a more liberal private expenditure than the simple strict income from the commercial business alone would seem to warrant, and yet will have a handsome balance to spare at the end of the year.

So far for the annual income and expenditure, and the balance at the end of the year. There remains still, the same as in Mercantile Accounts, the great and chief item of the Capital itself which this Country is possessed of. This Capital, which is carried forward year by year in the ledger of the Nation, makes

England the great Creditor of many Countries, and constitutes in itself an overwhelming balance in favor of Great Britain in the general account of relative international indebtedness. Although that portion of the Capital of the Country which is placed in investments abroad, is not immediately available, like the annual interest and dividends upon it, but falls due in longer or shorter periods of time, it will ultimately come back to the country; it may even, in part at least, in case of need, be realisable in other Markets.

The Country possessed of this wealth might for years continue to live actually on its Capital, and yet not be brought down to the low financial condition in which many other nations find themselves placed.

For France the Table shows :—

Exports in 1866	. . .	£158,000,000
Imports in 1866	. . .	137,000,000
Which leaves a balance of .		<u>£21,000,000</u>

in favour of that country.

We see thus that France, unlike England, clears a very large actual profit on her industry, which would place her in a favourable position even if she had no other resources. But she has other resources, though not quite so extensive as those of England. She has invested considerably in Foreign Loans, and is largely interested in many Railways and industrious enterprises abroad. Her Bankers and Merchants extend the sphere of the influence of their Capital and Credit year

by year more and more. Her Mercantile Navy may almost be said to rank next to the English now, although there is likely to be a change in this respect, so soon as the United States of North America shall have fully recovered their former position. Paris, with her powerful attractions for visitors, who flock to the place from all parts of the World, spending their money there, may be looked upon in the light of a most lucrative investment made by France. The Bullion brought annually to that City by foreign visitors, and spent there, may be reckoned by Millions Sterling. Whilst the French on their part are not a travelling people, like the English, and do not carry away much Bullion from their Country to spend it abroad. With all these advantages in her favour it is no wonder that France should have made rapid strides of late in the accumulation of wealth, and that she should have gathered more Gold than even England.

Germany we find returned as

Importing in 1866 . . .	£150,000,000
Exporting in 1866 . . .	140,000,000
Leaving thus a balance of .	<u>£10,000,000</u>

against that country. But Germany also has a very large Capital invested in Foreign Securities of all kinds. In United States Bonds alone more than 400 Millions Dollars have been taken by her in the last few years. Her own Home Securities are almost exclusively held in the country. The North German Mercantile Navy is large, and takes a considerable share in the World's Trade. Numbers of visitors flock to Germany from

other countries, whilst the Germans themselves, when they go abroad, do so mostly for business and profit, and not in search of pleasure. Many of them, when they have made their fortunes abroad, return to Germany, bringing their acquired wealth with them, which thus goes to swell the general stock of the country.

Holland figures in the Table with—

Imports for 1866	£39,000,000
Exports „	£30,000,000
Showing a balance of	<u>£9,000,000</u>

against the Dutch.

But Holland may be regarded as a kind of England on a smaller scale, with this difference, however, that the latter country is proportionally much stronger in industrial enterprises than the former. Holland derives large profits from her trade with other Continental nations. She is possessed also of considerable wealth, acquired in the times of her commercial glory, when she ranked almost first among maritime nations; which wealth is invested in foreign stocks and securities, more particularly Austrian and Russian. Holland's Eastern or Indian Empire, unlike English Colonies and Dependencies, yields the Mother Country a handsome annual revenue. The mercantile navy of Holland also falls into the scale as a source of income. As a general rule, Dutchmen, being of a phlegmatic temperament, are not much given to travelling abroad, so they do not spend much money out of their own country.

For Belgium we find :

Imports in 1866	...	...	...	£50,000,000
Exports	„	...	...	£47,000,000
Which leaves a balance of				<u>£3,000,000</u>

against the country. This excess of imports over exports, even taking it for fully granted that it is an actual fact (see foot note on p. 518), is easily accounted for by the comparative wealth otherwise of this prosperous little kingdom.

We may, then, look upon Great Britain, France, Germany, and Holland as the four nations with whom the Balance of Trade is not dependent upon a mere equivalent interchange of commodities, but who can afford to enjoy a larger share in the World's Goods by reason of their acquired Wealth and accumulated Capital. Belgium also may be included in this list, though the prosperous condition of that little country is not so much due to the actual possession of accumulated Capital as it is to the diligent industry and sage economy of the people.

Countries like Denmark, Sweden, and Norway, and most of the British Colonies (with the exception of India), may be said to hold a kind of intermediate position between these prosperous States and the lands that have fallen to a low financial condition. They are not very largely indebted indeed ; but a fair share of their National Debt is held abroad. Commercially speaking, however, they are generally indebted more or less to England and other countries.

Austria, Russia, Spain, Italy, and the United

States of North America are burdened with large State Debts, held mostly abroad, and entailing thus a heavy charge upon the country for the payment of the annual interest to the foreign creditor, for which Bullion has to be exported.

For Austria the Table shows an excess of exports over imports to the amount of £7,000,000; but she has to pay £13,000,000 annually for the Interest on her debt, and a considerable portion of these thirteen millions has to be sent out of the country; whilst she possesses little or no investments in the securities of other countries. She has, indeed, a respectable Mercantile Navy, and great natural resources; but the heavy State expenditure and the financial shifts to which her Government is forced to have recourse act as most serious drawbacks on her efforts to gain a fair surplus of Bullion from the ordinary Channels. The only resource left under the circumstances is an occasional loan contracted abroad, which leads to a kind of spasmodic importation of that most desirable commodity—Hard Cash.

To judge by the figures which are returned for Russia, that Empire would seem to balance her Trade Account. Unfortunately for her the figures returned are looked upon as slightly apocryphal. Russia's large State Debt is held abroad, whilst she holds no stock or securities of any other nation. Besides the heavy drain upon her resources, which the payment of interest on her National Debt to the foreign creditor involves, she loses considerable sums of money annually through the propensity of her wealthy aristocracy to indulge in

travels abroad, with that expensive display and pomp of which semi-barbarous nations are so fond. This may account for the fact that even with the rich yield of Gold derived from the Ural Mountains, the balance of trade can barely be turned in her favour momentarily, by the common expedient of an occasional additional State Loan raised abroad.

The United States figure in the Table for an excess of imports over exports in 1866 to the tune of some £25,000,000, in addition to which they have to pay an enormous yearly interest to the foreign holders of their State Bonds. The shipping of the country has been all but destroyed in the late Civil War, and even now the States have not yet got out of political troubles and internal strife. The enormous balance of trade against the great Republic is counterpoised at present to a great extent by the continual remittance of Debt Bonds to Europe, where capitalists are still inclined to invest in them, despite occasional falls in the price of these Securities. The characteristic energy and intelligence, and the indomitable spirit of enterprise of the American people, combined with the immense natural resources of the country, will no doubt in time to come do battle successfully with the State of the Exchanges which is likely to result from the present most unsatisfactory position of affairs.

India shows, in 1866, a balance of £20,000,000 in her favour. Considering that except during the few years of occasional stagnation of trade, India is always an importer of Bullion to a very considerable amount, sufficiently so indeed to alarm Europe, the Anglo-

Indian Empire ought to grow rich fast. The investments made by English Capitalists in India Stock, and the wealth which English settlers in India withdraw from the country upon their return to England, together with the large expenditure of the Anglo-Indian Government, unquestionably tend to check to some extent the increase of metallic wealth in the Indian Empire ; yet, notwithstanding these drawbacks, India possesses an immense store of the solid circulating medium, almost all in Silver. Unfortunately there is good reason to believe that the greater part of the Silver imported into the country is hoarded by the Natives, and hidden from sight, and thus kept from performing its legitimate function of circulating medium. India may be said to afford an exceptional instance of the Balance of Trade dependent simply upon the import and export of commodities, and consisting merely in the excess of the one over the other. But, as we have shown by the example of Great Britain and other countries, this is simply the exception. As a rule, the Balance of Trade and the mutual indebtedness of nations are not merely the result of an interchange of commodities between them, but of a variety of other elements combined with this.

We will now offer a few remarks on the action which is exercised upon the Exchanges by certain events or contingencies that are more particularly calculated to affect them, to wit, wars and revolutions, or political events likely to lead to them.

Whenever a war threatens to break out between two nations that have been actively trading with each other, both parties are alarmed, and strive to effect the speediest realisation of their respective claims upon each other, which they try to force upon the Market in Exchange for Bullion—of course at a greater or lesser sacrifice. So soon as hostilities commence, and commercial intercourse is cut off between the belligerents, the claims which the Merchants of one nation have upon the Merchants of the other are sent to foreign Markets. This eagerness to realise claims is very natural, being dictated chiefly by the mutual apprehension of general commercial insolvency and ruin, which is likely to be attendant on a serious war, and also by the desire to have possession of the ready Money, for which a better and safer investment may be found at home. If the trade between the two belligerent States was fairly balanced previously to the outbreak of hostilities, the fluctuations on either side are taken advantage of by the Merchants and Bankers of other countries, through whose hands the Bills and Drafts have to pass. Where one of the belligerents is largely indebted to the other, the creditor is obliged to part with his claims to third parties, on more or less unfavourable terms. The evil grows worse if the fortune of war goes against one of the parties. The fear of general commercial and financial ruin operates upon the other creditor States which continue at peace with the belligerents, and all the other Exchanges take the same unfavourable turn, more particularly against the State worsted in the struggle. In former times, when

war included among its horrors also the confiscation or destruction of private property, the financial and commercial ruin of the Members of the defeated States was looked upon almost as a certain and inevitable contingency. No wonder then that threats of war should be calculated to cause a panic in the Exchanges as in all other transactions.

In revolutions, where the shock is more likely to be confined to the nation concerned, the panic created among the commercial and financial part of the community tends also at first to the speediest realisation of claims on foreign debtors; whilst foreign creditors, in their turn, strive of course with equal eagerness to force on a settlement of *their* claims. But when the first rush of the panic is over, a strong desire takes possession of the minds of the wealthy to place their treasures out of reach of the danger which seems to threaten them at home, and to confide them to the safer custody of friendly nations; which makes the Exchanges turn in favor of the places of safety chosen. The demand for Bills payable abroad increases, and the rates rise accordingly, in proportion as the danger seems to increase, and they subside subsequently again in proportion as tranquillity is restored and security regained. The movements and fluctuations experienced in the Exchanges at the time of the French Revolution may be adduced as a case in point.

During the late Civil War in the United States of North America the Exchange on England and France in New York fell much below the Bullion Par of Exchange; it is not too much to say that Gold was

actually *forced* away from England for a considerable length of time, until the Balance of Trade due to the United States from previous years had been fully exhausted and absorbed. Some time after, although there had been a falling off of imports from England, and although American Bonds had been largely placed in Europe, the current of Gold turned back to England. This was at a time when the Civil War stood at a most critical juncture,—shortly after, when affairs took a better and brighter turn, the Exchange recovered.

If, in consequence of increasing financial embarrassments, a belligerent Nation is compelled to have recourse to the creation of a forced Paper Currency, which is sure speedily to suffer considerable depreciation, this new element introduced into the matter adds its disturbing influence on the Exchanges; and, unless the foreign Creditor stipulates expressly for the settlement of his claims in Metallic Currency, he is compelled, in order to avoid the loss which payment in the depreciated Medium must otherwise inevitably entail upon him, to seek compensation in a proportionate rise of the Exchange.

There are numerous special causes operating upon the condition of the Exchanges, some of which are known beforehand, and can accordingly be taken duly into account in estimating the chances of a rise or fall in certain Exchanges; whilst others come down upon the market suddenly and unexpectedly. Thus, for instance, when the travelling season commences, Exchange on France is sure to be in demand in London.

Cheques and Bills drawn by British travellers on the Continent are remitted to London, and Bullion has to be sent out in return. The effect of these withdrawals of Cash tells against us in the rate to the extent of 1 to 2 per mille.

On the so-called settling days at the Stock Exchange the purchase or sale of securities between London and Paris is sure to create a movement in either direction, according to the Balance due to the selling place.

The *Staff of Life*—Corn—exercises considerable influence upon the rates of Exchange. A good harvest at home makes us more independent of foreign supplies, and proportionably lessens the drain upon our monetary resources for Corn to be imported from abroad. A well-founded apprehension of a bad or indifferent harvest in any of the Corn-supplying lands makes the Exchanges rise there, and turns them in an adverse direction. The same rule applies to Cotton and other staple Commodities in which large dealings take place. Irregular trading, especially in the direction of over-trading, may also be numbered among the accidental and temporary influences operating upon the Exchanges. Before the commercial crisis of 1866, the Exportation of Goods from India to England had attained enormous proportions, and large amounts of Silver were sent out to Calcutta, &c., to buy up Exchange on London on reasonable terms. When, owing partly to the weight of over supply here, the Markets in Europe broke down, the Exchange on India fell fast to Par, and even below Par, and

Bullion Shipments ceased for a period of nearly two years.

Commercial Panics will affect the Exchanges most unfavourably; their action, as potent as it is sudden, manifests itself not only in the alarm created, but also in the decline of values of all kinds. In the case of India, just now alluded to, the evil effects of an over-supply of Indian goods in our markets were made much worse still by the Crisis in London, though that Crisis originated in causes altogether unconnected with the Indian trade.

Failures of great and important financial and commercial houses have, of course, also a powerful effect upon the Exchanges, as was most fully seen in this same Crisis. It would be useless to attempt to specify the many minor influences affecting the Exchanges between different countries, as this would necessitate a complete review of the commercial history of the several countries; and would, besides, be of very little practical use for enabling us to foresee and forestall Exchange fluctuations; since, as we have shown at the beginning of this chapter, there are too many elements to be taken into account in the calculation of the chances, and the ground keeps constantly shifting, so that the conditions and circumstances are never wholly alike at any two periods. Look, for instance, at the trade with America *before* the civil war and *now*; how would the description of the state and condition of the former tally with that of the latter? But although, as we thus clearly see, this most important branch of Finance and Commerce cannot

well be raised to the rank of an exact science, yet the careful and attentive study of the subject in all its branches is eminently useful, even were it only that it will teach us this great lesson, that the strictest adherence to sound social and economical principles is the safest guide through the haze and maze of ever varying chances and contingencies, and over the shoals and quicksands of unlimited and indeterminable changes and fluctuations; and that, with nations the same as with individuals, intelligence, energy, industry, and economy will ultimately safely ensure success, the same as the lack of these great qualities will be sure to lead to failure. As people sow, so they will reap; and the harvest to be reaped here is indeed worth striving for, let shallow theorists and would-be philosophers pretend to deride and despise it as they may: it is the bright glittering Gold, the shining Silver—it is wealth, which, when honestly gained and properly used, is as good a thing as this World has to show; and the successful honest trader of the present day—whether individual or nation—may proudly inscribe on his money-box the motto, *Honi soit qui mal y pense*.

PART III.

CHAPTER I.

CRITICISM ON THE BRITISH MINT.

STATE Mints are National Institutions of the highest Class, which have to perform most important functions in the Social and Political Economy of the State. It is self-evident, then, that to insure the proper performance of these functions, these Establishments should be as perfect and efficient in every way as the most liberal use of the ample material and mechanical means at the command of the Government of a Great Nation can possibly make them, with the aid of the newest discoveries in Science and the latest inventions and improvements in Machinery. The Site should be suitably chosen; the Premises spacious, and properly planned; the Buildings erected with due regard to their intended purpose; the Workshops well appointed; the Plant ample, and in every respect fitted for the Work, and the Officers, Assistants, and Workmen, thoroughly up in their several branches of duty, skilful, and efficient.

This may seem a high Standard; but it is what we conceive the Mint of a Great Country ought to be, especially of a Country like England, which has so long

been the acknowledged leader in all Monetary matters, and continues still first and foremost in the Mechanical Arts, whilst it certainly is not behind any other Nation in the ever advancing Progress of Science.

But does the British Mint come up to this Standard?

The author of this volume has personally visited, and inspected with great care and attention, the Establishment on Tower Hill, the Hôtel de la Monnaie in Paris, and several other Foreign Mints, especially in America. He has thus had a fair opportunity of drawing practical comparisons between the British Mint and certain Foreign Mints, and truth compels him to confess, however reluctantly, that the great Coinage Institution on Tower Hill, in its present State, falls far short of the theoretical Standard of an Efficient Mint, and that upon the whole it is by no means an Establishment of which the British Nation has reason to be proud. Most likely the Managers and Authorities of the Mint may object to our strictures on the Institution under their direction and care; but as that Establishment is a National one, we think it is fairly open to honest criticism; and, although the subject might seem to come only distantly and indirectly within the scope of the present Work, we trust that, even were it only for the interest which attaches to it in a Public Point of View, it may not be deemed out of place here.

To proceed systematically, we will begin with the *Premises and Buildings*.

The Passer-by on Tower Hill cannot fail to notice

the tall double Iron Railings and the imposing Gates, opening upon a spacious quadrangle, with extensive Brick buildings on the right and left, and a stately grey Pile in the rear, over which Policemen and a strong body of British Grenadiers keep watch and ward.

Judging from the outside appearance there would seem to be no legitimate ground for objecting to these Premises and Buildings; but the misfortune is that, with the exception of a few apartments in the magnificent Central Building facing the Tower, which are used for Offices, and with the exception also of the Assay Office, which, we believe, is in the same part of the premises, the actual work of the Mint is not carried on in them, but in a range of low-roofed, shed-like, and ill-arranged buildings behind. These workshops are not properly connected, and they occupy, together with a couple of useless yards enclosed by them, but a small section of the extensive area of the Mint Premises. It may be affirmed that the Operative Department, which surely is the most important part of the Institution, is stinted in space, and this cannot but greatly interfere with that efficient supervision and control over the work which is so indispensable in an establishment of the kind. As for the imposing semi-palatial structures in front, which strike the public eye, and almost look as if they were designed for show, they are turned to account chiefly to supply spacious and snug private residences, besides affording accommodation, as already stated, to the Accountant's, Assay and other

Offices, which we have no doubt are all properly conducted and well looked after.

We next come to the PLANT and the MACHINERY. The MELTING HOUSE is a small, dirty-looking, inconveniently arranged, and indifferently-appointed shop, which makes no favourable impression upon the visitor. Of course one cannot expect a place in which Coke is largely used to be kept as neat and tidy as a gentleman's kitchen; but one would think that the very nature of the precious materials manipulated there might suggest the propriety of a little more order and a trifle less dirt. In the state in which the writer of this volume found the Melting House of the British Mint, on the occasion of his visit to the Establishment, the place seemed to him but little suited for the important operations carried on in it; and he had a strong impression on his mind that the supervising Officer must find it next to impossible to enforce due order and neatness, and to exercise proper control over the proceedings in a place so inconvenient and ill-arranged. No doubt the old-fashioned furnaces in use in the Melting House may be found to melt very well, but they are certainly not the best and most efficient article of the class that might be procured.

The ROLLING MACHINERY of the British Mint is the best appointed part of the Working Plant of the Establishment. The machines are large and powerful, and have a fair allowance of space to work in. The work done by them is really well performed. The DRAW BENCH also is a most useful and efficient

instrument. The general method of Rolling and Drawing pursued in the British Mint differs in some respects from that followed in certain of the better conducted foreign Establishments of the class, but the results obtained as regards accuracy are, on the whole, quite satisfactory.

The CUTTING - OUT MACHINES are cumbersome, complicated, and most noisy implements; they are constructed upon the swinging-screw principle, already described in the Chapter on Coining; the screw being lifted by cams attached to a horizontal wheel overhead, and assisted in the down stroke by a pneumatic cylinder. They stand in heavy frames, and have all sorts of elaborate gear about them, the whole forming an apparatus very interesting no doubt as a piece of complicated machinery, but which certainly cannot be said to rank first-rate in practical usefulness, not to mention the rather serious drawback that it works with a most terrific noise and din. The work performed by these machines is simply to drive a punch through the metal sheet to cut out the blanks, which is now done much more effectually, safely and economically in almost every other Mint Establishment in the world, by a simple eccentric Lever Machine, occupying barely the one-fourth of the space cumbered by the Cutting-out Machine of the British Mint, and working almost without noise.

The COINING PRESSES of the British Mint are constructed upon nearly the same principle (see Chapter on Coining). At the time of their invention they

were no doubt justly considered to be marvels of mechanical ingenuity and skill, but great improvements have since then been made in the Coining Machinery, and the SCREW PRESSES ought certainly to give way now to the LEVER PRESSES as used in Birmingham, Paris, Philadelphia, and other places. Even more complicated in construction than the Cutting-out Machines, the British Coining Presses take up a great deal of room, and the work is not so well done by them as it is by the Lever Presses, besides which they, like the Cutting-out Presses, work with a truly terrific noise. The force of the stroke delivered upon the blank is entirely broken by the latter; if by chance the supply of blanks suddenly fails, or the blank slips away from under the Screw, the two dies will inevitably be violently clashed together, to their mutual damage. Whereas the Lever Presses work with a gentle movement; the moment the descending upper die touches the surface of the blank on the lower, the eccentric force increases in intensity, *squeezing*, so to say, the metal into the hollows and indentations of the dies. If the supply suddenly fails, or the blank slips, the dies are not brought into that violent and destructive contact as in the Screw Press.*

The Pneumatic Screw Presses work with a striking

* It has been alleged that the screw press gives a clearer impression and hardens the Metal. We admit that for large medals it may be a more suitable instrument, because repeated blows can be given; but for smaller Coins, such as Sovereigns, lever presses are much the best, and the impressions on the French and American Coins

power of from 30 to 50 tons, whilst the Lever Presses can be made to exercise a much greater pressure. The American presses which are employed in Coining the Gold 20 Dollars pieces are said to attain a maximum power of 400 tons.

The Lever Presses make scarcely any noise, save the low thumping sound attendant on the pressing of the Coin, and the slight jingle of the apparatus which transfers the blanks from the supply tube to the top of the lower die. They take up comparatively little room ; the lever is worked inside a powerful Iron frame, by a small fly-wheel at the side, which lifts it with every revolution.

To any one acquainted with the process of Coining, and having seen at work the superior Machinery employed in the leading Foreign Mints, it cannot but seem exceedingly strange, that a Nation like the English should consent to lag so far behind other countries in this respect. It is indeed a matter of surprise to us how the Conductors of the British Mint manage to compete so successfully as they do with other Mints in the execution of the Coinage turned out by them. Taking into due consideration the old fashioned, clumsy Machinery in use at the British Mint, the generally satisfactory state, in a manufacturing and artistic point of view, in which that Institution turns

are certainly not surpassed in clearness by that on the Sovereign. The heavy blows of the screw have the effect of disturbing the metallic structure of the piece, which the squeeze of the lever does not affect. Coins struck with the lever are, in our opinion, less liable to injury by abrasion than those struck with the screw press.

out its Coins, reflects credit on the Officers in the Operative Department.

We are convinced that the British Mint might procure the very best Machinery at a moderate outlay; and we are equally convinced that the introduction of all the modern improvements would speedily enable the authorities to effect a considerable annual saving.

We think a way might readily be found of effecting a thoroughly efficient Reform in the British Mint Establishment—Premises, Buildings, Plant, Machinery, and all. If we might venture upon a suggestion in the matter, we would say: *Let the present Establishment be sold*; the vast area of most valuable ground which it occupies will be sure to fetch a price in the Market *more than amply sufficient* to purchase a somewhat more limited space in a more suitable locality, to erect thereon a pile of buildings, less extensive upon the whole than those on Tower Hill, but more exclusively devoted to the actual work of the Institution, and more suitably planned and better appointed than is the case now, and to defray the necessary outlay for a new and improved Plant and the best modern Machinery. Such an Establishment would indeed be worthy of the Country.

The supreme management of the Mint in Paris is vested in a *Commission*, appointed by the Imperial Government, to supervise and control the operations of the *Monnayeurs* or *Moneyers*. The Moneyers are the parties contracting to *manufacture* the Coin for

the Government at a certain charge per kilogramme of Metal. The working Plant and the Machinery are their own property.

The French Mint suffers from some of the self-same defects which we have just now pointed out as affecting the Tower Hill Establishment. The *HÔTEL DE LA MONNAIE* is an imposing structure, standing on the Quai Conti, with solemn pillared entrance gates, silent courtyards behind, and on the right and left. In a court-yard on the left side a mean-looking door leads to the *Ateliers*, where the work is done. Except in this much that they lie closer together, and are somewhat more solidly built, these workshops are in no way superior to the sheds at the British Mint. The melting arrangements are bad; the furnaces for Gold melting and blanching are on the first floor; the Rolling-room is crowded with Machinery much less powerful than the Rolling Machines of the British Mint. The Cutting-out Machines, on the other hand, which work on the eccentric principle, are very good; they are self-acting in their guidance of the fillets, and punch out the blanks with great rapidity.

The COINING HALL is a handsome, well-constructed apartment. The Coining Presses are all Lever Presses.

The offices of the Moneyers are mean, dingy-looking rooms. The same as in the British Mint, a comparatively small space of the vast area occupied by the *Hôtel de la Monnaie* is assigned to the real Operative Department. The Mint Museum takes up the greater part of the space. The most stately

apartments in this Palatial Building are in the "occupation" of the *Commissionnaires*, in whom, as already stated, the supreme management of the Institution is vested, but who seem to have to do very little real work in the matter. Indeed, it might be said that the stillness which reigns over this solemn part of the building, where the magnates of the Imperial Commission have their official residence, affords the fittest emblem of the share of action taken by those gentlemen in the production of the Coin.

The fact is, both the British and the French Mints are institutions under Government control, with a monopoly vested in them for the manufacture of the special article which they produce; and the inevitable result, which constitutes at the same time their greatest and gravest defect, is, that they *lack the wholesome and invigorating stimulus of Competition*. Nevertheless, on the whole, the French Mint is a better appointed Establishment than that of England.

The American Mints are much superior to the British and French for compactness of building, cleanliness, and efficient machinery. The workshops are in suitable parts of the main building, well arranged for supervision, and the machinery and material in use are in admirable order—kept clean, even elegantly clean.

According to the law 40 lbs. Troy of Standard Gold are to be held equal to 1869 Sovereigns, and that weight of Metal shall accordingly be coined into 1869 Sovereigns free of charge, the Mint, as a State

Institution, supported out of the Public Purse, doing the work of Coinage *gratis*.

The regulation to that effect was introduced, partly as a set-off against the large profit made by the Mint on the Coinage of Silver, and partly in order to uphold the position of the Single Gold Standard, by making the intrinsic value of Gold Coin exactly equal to that of Gold Bullion. It is assumed then that 1869 Sovereigns are equal, in weight as well as in fineness, to 480 oz. of Standard Gold in a Bar, and *vice versâ*. Now to this assumption we must hold as essential to the character of the British Gold Coinage, upon the strict correctness of which we all pride ourselves. Making all due allowance for loss in Alloying and Coining, amply covered by the reasonable application of the so-called Remedy allowed to the Mint, we have a right to assume,

1. That, on an average at least, our British Gold Coin is turned out full weighted and exactly Standard fine ;

2. That the Coin supplied to the Public by the Mint is invariably subjected to official trials as to its fineness, and

3. That the Mint does actually coin 1869 full-weighted Sovereigns Standard out of 40 lbs. Troy Standard Gold.

It would only seem reasonable to expect that these conditions should be fulfilled with the utmost possible strictness. Yet we find that they are not absolutely so in practice.

It is quite true that the weight of the Sovereign when turned out new by the Mint is either quite full, or at least only a small fraction under. This trifling underweight, however, is usually much within the Remedy allowed for weight. The Coins issued are consequently quite legal. Some few of the pieces are occasionally a little over-weight, but the average of a number of new pieces, to the Credit of the Mint Authorities be it said, is maintained at full weight. The occasional shortness of weight of single pieces within these limits is of no great importance.

As regards the question of fineness, however, the matter is of more serious consequence. The strict average Standard is not maintained in the way it should be. The *Remedy*, as allowed by law, is simply meant to provide for accidents, as the law clearly states. We do not think the allowance was granted with a view that it should be habitually claimed, either wholly or in part. Indeed, we believe that its full application is only rarely put in force, and that, as a rule, the Mint works much within the range of the Remedy allowed. Still it cannot be denied that there is habitually a slight deviation from the strict Standard in the direction of Worseness; and the authorities of the Mint practically admit this to be the case, by their refusing to take back old Sovereigns at the Standard rate at which they are issued.

The case may be briefly stated as follows: When light Sovereigns are cut by the Bank of England, the owners of the cut Coins suffer a considerable loss. It is questionable even whether the law which compels the

owners of light Coin to bear this loss is quite just;* but, at all events, the loss should stop there, and the cut Coin should be taken and paid for by weight as Standard Gold.

Considering that the Coin has been issued by the Mint with an implied Guarantee that it is even cast of Standard Metal, one would reasonably suppose that all that need be done in the matter would be to take the cut Coin to the Mint, and to claim in Exchange the *same weight* in new Coin, just the same as if

* The local Bankers in London complain of this law as arbitrary. They receive the Coin at its full nominal value, and they suffer the loss on cut Sovereigns when tendered to the Bank of England. One of these Banks loses upwards of £6000 per annum in this way. It is argued that, inasmuch as the Public uses the Coin and causes the abrasion, the Public, through the State, ought to pay for the wear. In other countries the light Coinage is withdrawn from circulation at the expense of the State; and the English Mint does, from time to time, withdraw the worn Silver Coins, and replaces them by fresh issues. Why should this not also be done with the Gold Coinage? The loss now falls principally upon one class of the community—the Bankers, and this is considered an injustice to them. It would, unquestionably, be fairer that the State should bear this loss, which would distribute it over the whole community.

It is difficult to see how the fairness of this proposition can be denied or disputed, and the State Authorities may not feel indisposed, probably, to admit its justice; but, unfortunately, a specious argument seems to stand in the way of a reform of the present system. It is asserted, in defence of the practice now prevailing, that dishonest parties would be encouraged in the nefarious practice of *sweating* the Coin, by a certain peculiar process (which we care not to describe here), if facilities were afforded for exchanging pieces lightened of a small amount of Gold against new Sovereigns.

Bullion were offered. This supposition would appear all the more reasonable, as the Mint, receiving in the cut Coin an article already Standard for Coining, would save the trouble and expense of Alloyage, necessarily incurred with other Bullion.

But the Mint *refuses* to effect this Exchange, and the Bank of England will only pay 77s 6½d per ounce of old Sovereigns, which is a clear loss of 4d per ounce upon the Coinage rate of 77s 10½d, equal to 1 in 234, or about $\frac{1}{6}$ per cent. *

This affords pretty strong presumptive evidence

from the Mint, which practice would be sure to entail, it is argued, a considerable loss on that Establishment. To the *sweater* it really can make no difference whether the Mint takes his *lightened* Sovereigns, or whether the Banker does, so we cannot exactly see how the present system can possibly be considered to prevent sweating. This nefarious practice is not known in other countries, where the State exchanges new Coin against worn Coin, and we truly believe that there is no more danger of it here in England than elsewhere.

But supposing even that the objection holds good; provision might easily be made against the dangers of sweating, to a certain limited extent. At least, a Coin that has been sweated can easily be detected, and it might be exempted from the rule. The Coin might moreover be struck in such a way as to facilitate detection. The old Guineas were rather liable to *sweating*, on account of the rough workmanship; the present Sovereign is very superior in this respect. The Gold Coin might be made with a slightly stouter rim, and smaller but sharper designs, showing a larger extent of plain surface, which, struck with highly polished dies, would at once betray the action of the sharp friction powder that is used by *sweaters*.

* The French Mint is bound to buy light French Gold Coin at the Tariff rate for 900 fine.

that the Mint Authorities do not look upon the Coin issued by them as *Standard*.

The wholesale Jewellers of London complain that when they manufacture Standard articles from British Gold Coin, they run the danger, at Goldsmiths' Hall, of having them broken for want of fineness; in order to guard against this, they add six grains of fine Gold to every ounce of Standard Gold Coin.

One of the causes to which the lessened fineness of worn Sovereigns, as compared with the Coin newly issued from the Mint may be attributed, is that our British Gold Coin is too much "pickled" or "blanched." We have described this process, page 275. The blanks, before they pass between the Dies, are pickled in a solution of sulphuric acid, to remove the oxide of Copper formed on them in the process of Annealing. If this pickling is continued too long, the acid will dissolve a minute portion of the Alloy, and a coating of fine Gold will then form on the surface of the Coin, which, being softer than the Standard Gold, will wear away after a while. Thus, when new Sovereigns are melted, this coating of fine Gold renders the metal finer than that run down from worn Sovereigns, which have lost the coating of fine Gold. That the pickling thus has a distinct effect on the fineness of the metal is a matter of fact, capable of practical demonstration; the effect is not sufficiently marked to account for the whole of the deficiency of fineness observed in worn Sovereigns; the loss of alloy by pickling does not exceed $\frac{1}{20}$ th per mille on the whole weight of the blanks. We may as well remark here that

this practice of excessive blanching of the Coins is an unnecessary one ; it certainly gives a very bright look to the pieces, but this appearance is deceptive, and not in accordance with the actual quality of the metal. The surface is rendered soft moreover, and after a while it begins to look shabby. The deposit of fine Gold, after the removal of the Alloy by blanching, amounts to rather more than $\frac{1}{8}$ per mille on the weight of the piece, or about $\frac{1}{16}$ th of a grain. The removal of this fine Gold, so easily effected by abrasion, is the first cause tending to make Sovereigns *light*. Foreign Mints pickle the Coin only to the extent necessary to remove the oxide of Copper, which, unquestionably, is the right course to pursue.

From Assays which we ourselves have witnessed we find British Gold Coin always reported $\frac{1}{8}$ th worse, and some parcels $\frac{1}{4}$ th worse. True the $\frac{1}{8}$ th worse report is due, in a measure, to the unfavourable manner of stating the Assay in England, as Coins found 916, 916·2, and even 916·5 (close to Standard), are reported $\frac{1}{8}$ th worse. The actual average deficiency cannot well be stated, except it be done officially ; but whether this be $1\frac{1}{2}$ or 1 or $\frac{1}{2}$ per mille, the fact that the Coinage is habitually under Standard cannot be denied. The deficiency seems, however, to remain generally within the Remedy allowed, and this is so far creditable to the managers of the Mint ;—still the real intention of the law, and certainly that of the theory of the British Gold Coinage, is that, on the average, the Coin should be quite full Standard.

The control which the Government exercises over the Coinage is not sufficient, in our opinion. Official Assays ought to be made quite independently of the Mint Authorities; if not for each "journey" of Coinage, at all events once or twice a year. At present the only check upon the Mint is what is called the "ancient custom of the Trial of the Pyx."

The PYX is a box (or rather, a series of boxes) in which samples of the Coinages issued during a certain period of time are kept, to be tried and assayed. The ancient custom is rather a solemn affair, and there is a great deal of ceremony observed in the appearance of the Jury before the Lord Chancellor. After these solemn parts of the proceeding have been duly disposed of, the Jury betake them to Goldsmiths' Hall, where the samples of Coins deposited from time to time in the Pyx by the Master of the Mint, are weighed and assayed; after which the Jury finally report their finding thereon.

At the *Trial of the Pyx* in 1866 the samples tried represented the Gold Coinage of five years, to the total value of something like 35 millions Sterling; these were first weighed, and a *few ounces* were melted into an ingot, which was then tried by treble assay.* The Silver Coinage for the same period, amounting to more than $1\frac{1}{2}$ million, was tried in a similar manner.

The Jury reported the Assay as satisfactory, and there the matter ended. Now, will any one pretend to say that this simple process to try 35 millions of Coin

* In the *Trial of the Pyx* of 1861, the Coinage for seven years was tested in the same way.

is an absolutely right one. Practical Melters and Assayers must be aware that when a small quantity of Gold, say 50 or 100 Sovereigns, are melted, the danger of over-heating is very great, and the liability to error in *favour of fineness* considerable. Yet here we find the whole Coinage of five years subjected to one single trial ! The witnesses to the Assay may know whether this trial was as satisfactory in every other way ; we think, however, that the public might reasonably claim a full account of the actual results found by the jury, minute as to weights, fineness, accidents of and loss by melting, and every other particular included in the verdict "satisfactory."

Indeed, it is not too much to say that the *Trial of the Pyx*, as now conducted, is worse even than a mere idle ceremony : it is a farce, of little practical value, tending to create false impressions about the supposed absolute purity of our Coinage. If it is the duty of the State, and there can be very little doubt indeed that it is, to have the Coinage of the country periodically tried, the trials ought surely to be conducted in the best and most effective manner, and the results ought to have the fullest publicity given them. If it be deemed necessary to have the Gold Coinage of the country properly examined and tested by parties independent of the Mint and its Management, let it be done in a proper business-like manner, and at intervals of not more than one year.*

* In France the trials of the Coinage are conducted in a very different manner. The Authorities of the French Mint, under whose control the Coinage is placed, stand before the Moneyers and the

We are of opinion that the British Mint ought to be able to turn out as good a Gold Coin as Russia. The Russian Half Imperial is, without exception, the most regular Coin as regards fineness; and surely we ought to be able to be as careful as the foreigner. It is not sufficient for us to do an ordinary thing in a fairly satisfactory way; but we ought to be at the head of all Nations in the accuracy of our Gold Coinage.

The British Mint still enjoys the Remedy of about

Public. The batches of Coin are weighed and arranged by them. Instead of casting a number of Coins into an Ingot, they Assay the individual pieces, thus avoiding the risk of unduly improving the fineness by re-melting. The French *Moneyers* derive no benefit from the Remedies for weight or fineness. The French Money law fixes a certain weight for the Napoleon; if a batch of Coin is found under or over this weight, the Moneyers are debited or credited for it. The law gives fineness at 900; if the Moneyers turn out Coin of only 899, or 898·50, or 898 fine, they are debited with 1 or 1½ or 2 millièmes; if there is an excess of fineness they are credited with it. If the Coin turns out below 898, or above 902, it is returned upon their hands for re-coinage. The allowance of a remedy is necessary, as it is impossible always to coin exactly 900 fine; and, indeed, in this respect the French Coins differ just as much as other Coins—but it is the Public Treasury which gets the benefit of such Remedy, not the *Moneyers*. It is proposed now to reduce the Remedy in France to 1 per mille, instead of 2 per mille as hitherto; and, considering that the French Assay to $\frac{1}{100000}$ th part fine, this is quite fair. Working under these restrictions, the French Moneyers naturally take good care not to lose Metal in either the Melting, or the Coining Process; the loss incurred falls upon them, not upon the Public as it does here in England. The French *Moneyers* receive fs. 6·70 for each kilogramme of Gold Coined, and fs. 1·50 for each kilogramme of Silver.

In the American Mints the annual assays are taken both from the Coins themselves, and from Ingots cast of them.

2½ per mille for weight, and of about 3 per mille for fineness. This may have been all very well and equitable in olden times, when Science had not yet attained its present high state of development; but the progress which has been made since then ought surely to entitle the Public to demand that the Remedy should be restricted now within closer limits.

The so-called WASTEAGE to which Mints are liable, forms also an interesting subject for inquiry. We have already stated that a slight loss of weight takes place in the melting; but this loss is caused by the oxidation of small portions of the inferior Alloy, not by actual absorption of Gold. In the subsequent processes of Rolling, Drawing, and Coining, minute particles of metal may get detached; but such loose particles ought always to be found in the machinery or on the floor.

With Silver there may, indeed, be a slight actual loss incurred, unless the melting be most carefully conducted. But with Gold there can be no absolute loss of Metal, either in the melting or in any of the subsequent processes; at all events, not a particle of the Gold is destroyed. If then we find that a fractional loss of the Precious Metal is sustained notwithstanding, the question naturally arises, What becomes of the lost fraction? Where does it go to?

We beg leave here to quote an extract from an Article, published some years ago by Mr. Ansell, one of the Officers of the British Mint.

“It would appear that the Royal Mint sustains less loss than any other Mint by the Coining of Gold and Silver. If allowance be

made for the sale of the sweep or dust which results from a Coinage, the total loss, inclusive of every operation in Coining, is so small that it may be passed without notice : in fact there is a minute increase of weight from traces of oil which are left on the fillets to enable them to pass through the cylinders of the draw-bench ; but by Melting there seems to be a loss of metal which reaches about £100 per million Coined, but such a loss is wholly explained by the refining, which takes place by the removal of Copper from Oxidation ; although this is minute, still it is enough to explain the loss which arises. If the Assays be closely watched there can be no loss, for the Trial of the Pyx invariably shows the Gold Coin to err on the side of purity ; so that if the Master of the Mint should determine to issue Gold of exact Standard, and refuse to avail himself of the latitude allowed, he may fairly cover every source of loss, and Coin without waste of metal. Each grain that is found in excess of the Standard upon the pound weight of Gold, causes a loss of about £180 upon each million Coined. The Moneyers asserted that they sustained a loss of £700 for each million Coined ; this was exclusive of melting. It has never been believed to have been a truthful statement, nor has the loss by Coining alone ever reached so high an amount, although so large a sum as £373 per million would seem to have been determined by some careful experimenters as the necessary loss. Where the Gold went to was not stated by these experimenters ; but supposing such a loss to accrue, it is manifest that the floors of a Mint must be paved to many inches in thickness with Gold, for it is an established fact that matter once existent cannot be annihilated ; but even with the data established in the Royal Mint it would seem that foreign Mints still sustain a considerable loss, which must result from peculation."

An Officer of the British Mint may be excused if he states that "*it would appear that the British Mint loses less than other Mints,*" and that "*foreign Mints still sustain a considerable loss which must result from peculation;*" still we should like to see some proof adduced in support of these assertions. Here the

question arises, in the first place, whether there are any authentic or official data by which the loss from *Wasteage* sustained in the British Mint may be estimated. Does the Establishment on Tower Hill freely and frankly publish to the World its Annual Wasteage Report, as certain other Mints are in the habit of doing.

Mr. Ansell, in his article, admits rather vaguely a loss of £373 per Million Gold; we happen to know that at certain periods the loss has been much larger. The Authorities of the Bank of England (if they felt so disposed) no doubt could tell from their books how much Coin they have received in exchange for Bullion sent in by them to the Mint during the last 20 years, and how much the Mint has had to pay to make up the deficiency in the Coin delivered.

The Mint is a Public Institution, and it is therefore bound, we think, to publish its Wasteage Accounts, both for the benefit of abstract science, and also for a more efficient Public control over its own management. The Master of the Mint, who has many duties devolving upon him, cannot be expected of course to join personally in the processes in the Operative Department; but, with an efficient management, the Officers under the Master ought surely to take a pride in publishing the Wasteage Accounts, to show their scientific attainments or the carefulness of their manipulations.

We know, as a matter of fact, that in the Prussian and French Mints, the Wasteage is smaller than it is in the Establishment on Tower Hill. The moneyers,

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who work the French Mint by Contract Government, take good care not to lose more Precious Metal than they can help. The Mints, we admit, lose as much by Wastage British Mint, if not more even; but surely the reason why we should not endeavour to prevent the Mint of the disorder called *Wastage*.

Bullion dealers will understand us when we say that the British Mint not only should suffer from wastage, but that it should actually make profit on the Gold Coinage. The British Mint is always under the real fineness; say, on an average about $\frac{1}{2}$ per mille,* or some £500 per million. Accordingly, in each £1,000,000 sent into the Standard Bullion, the Establishment receives £1,000,500; so that it ought surely to be in a position to strike 1869 Sovereigns out of 40 Standard Gold, with a small surplus to show of a loss, as is the case now.

For, as we find from Mr. Ansell's article of £373 per million Gold is actually admitted by the Mint and the Bank alone may possess the data, but if we average the loss really at $\frac{1}{2}$ per mille, there would—adding the $\frac{1}{2}$ per mille for wider Assay—be a total loss of 1 per mille, or £1000 on every million. How then are we to account for this absolute

* An Assay reported 916.5 fine is called $\frac{1}{4}$ th worse than equal to 915.3 only—a difference of 1.2 per mille, the loss is 0.6; so if we take 0.5 per mille, we are quite within the

appearance" of a certain amount of Precious Metal from the Mint? To cover all possible fallacy of theory, let us even grant that $\frac{1}{3}$ th of the loss is due to actual destruction of Gold, this will still leave the remaining $\frac{2}{3}$ ths of the loss unaccounted for.

We should like to see a Return moved for in Parliament of the Wastage of Gold at the British Mint from 1850 to the present year: it might show whether there has not been, at certain periods of the Management of the Operative Department, much less loss than at others, and whether there has not been occasionally a small gain even, as there certainly ought to be with proper management.

A return of the Wastage of Silver might also prove interesting, as well as an account of the imperfect work, returned to the Melting pot, during each year.

The author of this Criticism on the weak points of the British Mint has taken great trouble to get at the facts here stated; he is quite open to correction, should any of his statements turn out to be unfounded. He trusts it will not be overlooked that he is most willing to grant all proper credit due to the Mint Management for working much within the legal Remedy allowed, and for turning out the British Coinage in so creditable a manner as it is done; for, barring the comparatively trifling defects pointed out here, the character of the British Sovereign for due weight and fineness, and for artistic execution, stands as high, at least, as the majority of Foreign Coinages. This, however, is not sufficient. Great Britain, being the first

and foremost among the countries that have adopted the Gold valuation, should not be satisfied simply with keeping the Coinage up to the level of that of other Nations; but she should strive to excel them all in the scrupulous exactness of weight and fineness, and in the highest artistic finish of the pieces issuing from her Mint.

The principal point, which the author would urge upon the authorities is the *necessity* of rebuilding and re-appointing the entire Establishment upon a comprehensive plan, permitting the most efficient control over every department, and of fitting it with all modern improvements calculated to make the British Mint truly the first Coinage Institution of the World.

This question of the re-building of our Mint will, moreover, be sure to force itself speedily upon the attention of the parties whom it concerns, in connection with the present agitation in favour of the adoption by all nations of a Universal System of Coinage.

CHAPTER II.

BULLION AND RATES OF DISCOUNT.

THE Bank of England raises or lowers the rate of interest according to the demand for Gold Bullion and the supply of the article stored in its vaults. The Rate of Discount which the Bank fixes from time to time *rules* the Money Market, although the Bank itself is entirely guided in its decision by the alternations and fluctuations in its own resources, without reference to the supply of money at the command of other large Banks in the *Market*. These other Banks are at perfect liberty to follow the example of the Bank of England, or to take an independent course of their own ; but, as a rule, they *do* follow the example of the Bank of England. The raising or the lowering of the rate of Discount cannot be called, then, an arbitrary proceeding on the part of the Bank of England. That great institution being, in a certain sense, the General Banker of all other Bankers, and of the nation at large, its own position, with its fluctuations, fairly indicates the financial state and condition of the country.

Whenever over-trading is going on to a considerable extent, obliging the Bank to make heavy advances, or to discount Paper on a large scale, the time is sure to arrive, sooner or later, when the exhaustion of existing

and the failure of further resources will put a compulsory stop to speculative business, and the drain of Bullion from this country will make money scarce and dear. On the other hand, with the reaction which is sure to set in after a time, Bullion will flow back into the country, and Money will get abundant and cheap.

In such times of over-speculation, when the Commercial World is fast hurrying on to the inevitable crisis, the rise in the rate of Interest will take place abruptly, and advance with fast strides. A sudden and rapid commotion of this kind in the Money Market cannot but tend to endanger the interests of Commerce, by entailing heavy losses upon merchants, and leading to numerous failures, and to the partial ruin of trade, with its concomitant train of destitution and misery to the lower classes.

There is a familiar expression used to designate the action of the Bank on such occasions. The Bank is said to *put the screw on*, and the expression is indeed fairly applicable to the case. When the *screw* is thus *put on* abruptly, and with the utmost force, the result is that Commerce finds itself compressed beyond the power of rebounding; its elasticity seems destroyed for a time, and, when the pressure of the screw is relaxed at last, there is no vigorous response of a corresponding re-expansion. Then come the times of general stagnation, *no business*, and *universal slackness*. Money is over-abundant then and unnaturally cheap, immense sums lying idle, seeking in vain for safe investment.

It is excusable, perhaps, under the circumstances, that the Mercantile Community should bitterly complain of the action of the Bank of England, and assail the privileges of that great institution.

However, we believe that the Bank does not deserve all the blame lavished upon it on this score. A tendency to over-trading is quite a natural characteristic of an enterprising nation like the English. And, no matter whether it ought to be looked upon as a virtue or a fault, this tendency is a good deal encouraged by the Banking system generally as practised in England, and more especially in London. The anxiety of the trader to stand well with his joint-stock bank, by keeping a large balance as a voucher for his solidity, on which depends the goodness of his bills for discount, combined with the eager competition of Banks to secure the largest share of business, and declare the largest dividends for their shareholders, will necessarily lead both the trader and the banker to depart from those sound principles of cautious prudence upon which all healthy commercial speculation should be based. The artificial activity thus imparted to trade will temporarily create a state of fictitious prosperity, sure to terminate, sooner or later, in greater or lesser embarrassment to the rash speculators, individually as well as collectively. When the smash comes, as come it naturally will and must, it is quite idle to impute the misfortune to the Bank of England and its extravagant privileges.

Still the Bank cannot be held entirely blameless in the matter. It must be admitted that that great In-

stitution holds a most exceptional position, enabling it to exercise an all-powerful influence upon the course of business in the Money and Discount Market, and that in the exercise of this influence it mainly acts upon a somewhat over-rigid principle, and is guided by certain unbending rules, to which the extreme suddenness and rapidity in the rise of the rate of interest may be ascribed. When the Commercial Community has been largely over-trading, and the resources of the Bank threaten to fail, it may be quite fair, no doubt, for the Bank either to refuse affording further accommodation, or to charge a high rate of interest for discount; but this does not explain the violent fluctuations in the rate of interest which are occasionally experienced in the brief space of a few weeks. That the apprehension lest the Stock of Bullion in the vaults of the Bank should be unduly reduced to a small per centage only on the amount of Notes in circulation, should influence the action of the Bank to some extent is also conceivable; though, for the matter of that, the Institution in Threadneedle-street might always safely count upon the aid of Government, which would supply the necessary Cash in discharge of the debt owing to the Bank. There are certain Financiers who maintain that the Bank Authorities are *too lenient*, and that they begin to have recourse to the restrictive system only when it is too late to prevent a crisis, which thus comes upon them too suddenly to allow proper preparation being made to meet it effectively. But, apart from all this, is there not some other cause at work in the matter,

to which the violent fluctuations in the Rate of Discount may be partly attributable?

If Gold is scarce, it may be asked, Why does not the Bank buy the article wherever it can be procured, and at *Whatever Cost*?

This question leads the way to the consideration of the policy now pursued by the Bank of England, and thus by the community represented by that Institution, in the purchase and sale of Gold Bullion.

The Bank of England buys Gold at 77s 9d, and sells it at 77s 10½d per oz. Standard. From these rates no departure whatever is made. However abundant may be the Shipments of Gold arriving in this country, the Bank rigidly pays 77s 9d per oz. Standard, never a farthing less per oz.; however large may be the drain of Gold from the country, even though reducing the Stock of Bullion in the Bank to an extent alarming to the Mercantile Community, the Bank is bound to continue selling Gold at 77s 10½d per oz. Standard. Now, it is for the express purpose of counteracting this rigid rule of price that the Bank of England lowers or raises the rate of Interest, the theory which lies at the bottom of the system being that Capital will accumulate most wherever its value, as expressed by the rate of Interest, is highest.

Mr. Nicholson, in his work on Exchanges, in answer to question No. 199, "What is the natural tendency of Bullion?" says, "It is to flow towards those markets where the best price can be obtained for it, so that the raising of the rate of Interest to a very high point in any country has the double effect of preventing

the exportation of the Bullion or Coin which is in that country, and of attracting Bullion or Coin to it from other countries."

If this were an undeniably true axiom, the assumed invariable tendency of Bullion to seek the place where interest ranges highest would certainly seem to provide, in its own extreme pliancy, a most efficient counterpoise against the adverse effects of the extreme rigour with which the Bank of England adheres to the fixed buying and selling price of Gold Bullion and Coin. A combination so simple and logical as this, it clearly would not be prudent to attempt to disturb. Until the event of the Crisis of 1866 our financiers had the fullest reliance upon the effective working of this rule, and apparently with justice; for up to that time experience had seemed to bear out the correctness of the proposition. Money was retained in the country, or flowed into it from abroad, whenever the rate of interest here was raised. In the first place, the rise of interest tended to check speculation for enterprises abroad, by affording more profitable employment for money here; in the second place, the Exchanges declined, which naturally tended to bring Gold over here; and, in the third place, Bankers and Capitalists abroad, being able to realise larger interest in the English Market than in their own Home Markets, sent their money over here for investment. Almost every crisis in the London Market was thus followed by a rapid reaction, and an abundant influx of money. No wonder then that our financial authorities should look upon the working

of the system embodied in the above axiom as perfectly satisfactory, and that any suggestion in favour of a different policy should be regarded as a financial heresy.

But those who held this view of the matter had, unfortunately, omitted to take into proper account the many sudden and unforeseen changes to which the business of finance is liable, from political, social, and other causes; and they were doomed to find, in 1866-1867, that their much vaunted system of high interest proved nearly a complete failure, neither attracting Bullion to the country, nor even checking the drain of Bullion from it.* During the whole of the ever memorable year 1866, the interest on Money in England ruled at rates much higher than on the Continent, until at last the discount on first-class bills reached *ten per cent. per annum*. Yet the Bullion in the Bank decreased continually, despite the high rate of interest. Whereas, in France, discount remained at from 3 to 5

* Mr. Göschel says, on pages 133 and 134 of his book:—"The efficacy of that corrective of so-called unfavourable Exchanges has been most thoroughly tested since the Bank of England has adopted the system of varying its minimum rate of discount more rapidly and more extensively than was its practice in former years. . . . The fact has been that almost every advance in the Bank rate of discount is followed by a turn of the Exchanges in favor of England; and, *vice versâ*, as soon as the rate of interest is lowered, the Exchanges become less favorable."

In 1866 when Interest rose to 10 per cent, and in 1867 when it fell to $2\frac{1}{2}$ per cent., the Exchanges, especially that with France, remained without much movement, and kept decidedly unfavorable to England.—(See Table on pp. 425 and 426).

per cent., and the stock of Bullion there increased in the same ratio as ours kept on decreasing. The French stuck to their money, and declined entrusting us with it. The foreign Bankers, it is true, took large quantities of first class bills from us; but they took *none except first class bills*, and these at rates only slightly below London interest; and it was estimated at the time that first class Paper of ours was held on the Continent to the amount of from forty to sixty millions sterling! This could only tend, of course, to keep up the drain on our Bullion resources, as, upon the falling due of these Bills, we had to send over their value in Bullion. The experience of the Crisis of 1866 taught us two important facts, viz. :—

1. The break-down of our cherished system of attracting Bullion to our shores by a high rate of interest.

2. The altered state of the financial position of England in relation to the Continent, and the power of capital acquired abroad, especially in France.

Now there are certain financiers who would suggest that the Bank of England, or the Mint, or the Government, should pursue in future a different policy with regard to the purchase and sale of Gold; in fact, they call for *free trade* in Gold. This latter expression is certainly not fairly applicable to the state of the case. There exists *free trade* in Gold now, to all practical intents and purposes; at least there are no laws or regulations hampering the trade in Gold. The Bank certainly chooses to buy and sell the Precious Metal at certain fixed prices; but if anybody thinks he can do better by pursuing a different course, he is

surely at perfect liberty to do so. But the free trade proposition, as understood by the said financiers, amounts in reality to this:—"When Gold is abundant, let the Bank buy the article at as much less than 77s 9d that they can get it, and sell it again at a corresponding reduction on the present price of 77s 10½d. When Gold is scarce, on the other hand, let the Bank purchase, if necessary, at a higher rate than 77s 9d, and sell at a higher rate than 77s 10½d per oz." Which, expressed in other terms, simply means, "Let the Bank deal in Gold at a discount or premium from the present Mintage Rates."

It will at once be apparent that the fluctuations in the price of the article that might result from the adoption of this principle must necessarily lie within narrow limits. The market price of Gold can never fall much below the Coinage rate, for were it to fall considerably below that rate, the value of the Coins of the realm would be disturbed and debased; on the other hand, it cannot rise much above the Coinage rate; for, supposing it were to do so, the holder of Coin might find it profitable to melt it into Bars. To adopt a variable Coinage, containing more Gold or less Gold in Coin of the same nominal value, would, of course, be altogether out of the question.

The possible fluctuations would simply range between the cost of Coining, the Mint Remedy allowed, and the abrasion, lessening the value of the Coin, on the one hand; and the simple value of uncoined Bars, on the other hand.

The Bank buys Gold at 77s 9d per oz., and con-

tinues to do so even in the face of a large accumulation of idle money, though money lying idle is acknowledged to be almost as great an evil as scarcity of the article. Supposing the Bank were to regulate the price according to the requirements of supply and demand, and were thus, for instance, to reduce its buying price at a time of superabundance to, say, 77s 6d per oz. ; what would be the consequence? The surplus stock of Gold in the Market would then go to the Continent or elsewhere—that is to say, instead of further enlarging our idle stock, it would make us *creditors* abroad, turning the Exchanges in our favour, or bringing an equivalent in commodities to our shores. The value of our Gold—for, when *in* the country, it is *ours*—would thus nevertheless be made available for *our* benefit, though through a different kind of investment. Let us suppose, on the other hand, that there is no demand for Gold abroad, and that there is thus no outlet for the article, the result would simply be to turn the Exchanges in a way to make 77s 6d per oz. the equivalent price of the article, which would thus remain in the country despite the lower rate offered for it by the Bank. By skilful manipulation of this *sliding scale* the Bank Authorities might always secure the Stock of Bullion demanded by the requirements of Trade and Industry.

Now let us take the reverse. When Gold is scarce the Bank might offer 77s 10½d or 77s 11½d per oz. for the article, and thus attract Bullion over here. It is evident that the rise must be confined within a certain narrow limit ; for, were it carried beyond, the result

would simply be the melting down of Sovereigns for the purpose of re-selling them in Bars to the Bank at a profit. This limit can be determined by the price which new Sovereigns would realise, deducting the Mintage Remedy, and the charges for Melting and Assaying.

Taking the average loss by abrasion at $\frac{1}{3}$ grain only (the provision being made against it exceeding $\frac{3}{4}$ grain), this would afford an additional protective margin of about $\frac{1}{4}$ per cent. for Sovereigns in actual circulation. The price for Gold might, therefore, if needed, safely be raised to 77s 11 $\frac{1}{2}$ d, and the Bank, being practically the only primary receiver of new Sovereigns from the Mint, might easily keep the new Coin back from circulation for a time.

Instead of selling Gold at 77s 10 $\frac{1}{2}$ d per oz., the Bank might raise the rate to 77s 11 $\frac{1}{2}$ d or 78s per oz. The exporter of Bullion would in that case fall back first upon the light cut Sovereigns, of which we should be rather glad to be rid; after the exhaustion of this source, he would come to the circulating Coin, which would cost him, however, more than 77s 10 $\frac{1}{2}$ d per oz. As regards new Sovereigns, the Bank might keep them back from circulation for a time, as we have just now remarked. It is only when this expedient can no longer be pursued that the price of Bullion need be lowered.

From these premises it follows that the Bank might safely, and without the least danger to the Coinage, depart from its rigid adherence to the narrow margin of 1 $\frac{1}{2}$ d between its buying price of 77s 9d and

its selling price of 77s 10½d, and widen this margin to, say, 3d to 5d per oz. Beyond this point, however, the Institution cannot go, and the demanded *free trade* in Gold must be kept confined within the narrow bounds of this limited range.

The somewhat greater freedom of action of the Bank of England here proposed would, of course, derive additional support from the facility afforded the Bank of paying for Bullion in Notes of its own issue.

Now, the important question in the matter is, who is to pay the extra price for the purchase of Gold; for this suggested relaxation of the actual strict rule of the Bank of England would certainly act principally in the direction of allowing the Institution full liberty of paying a premium on Gold when the article is scarce. How is the Bank to be reimbursed?

Before entering upon the discussion of this question, let us inquire first, whether a direct premium offered by us on Gold would really have the effect of bringing the article over here. The most conclusive answer we can give to this query is to point to the example of France.

Shortly after the accession of the present ruler of that country a premium on Gold Bullion was offered by the Bank of France, and the payment of this premium on the article was continued for several years. Large quantities of Bullion were brought to the country, and upwards of 150 millions sterling in Gold have since been coined in France, whilst the mass of Gold in circulation among all classes of society proves that, by

some means or other, the nation has very quickly grown wealthier. It may be argued that the improvement in the political, social, and industrial condition of the country has had a share in producing this change, and that due allowance should be made also for the Gold required to re-place the Silver Coinage exported to India. Still these causes combined are insufficient to account for the marvellous change which has taken place, and which has made France at this time the principal storehouse of Gold Bullion in Europe.

At this present time (March 1868) the Bank of France holds an amount of Bullion nearly double that held by the Bank of England. Is this to be attributed solely to the improved condition of France? If so, then all that can be said upon the point is that there is no known instance of a national progress equalling this in rapidity; and England must acknowledge that France has overtaken and outstripped her in the successful practical application of the principles of social and political economy.

There can be no doubt but that the wise offer of a premium on Gold had the covert effect of turning the Exchanges in favour of France. Small as the inducement offered may seem to the ordinary reader, it was large enough to determine English and other Bankers to export Bullion to France. It was certainly by the offer of this premium that Paris secured the influx of a large quantity of Gold, although—and this is a point which must not be overlooked in considering the matter in all its bearings—this extra influx

of the Precious Metal into France might, in a certain sense, be regarded rather in the light of borrowed Capital than as National Property actually acquired; for France could not immediately make an equivalent return for the Gold in other commodities of her own production. The Bank of France paid this premium on Gold; and for a number of years the weekly statements of that Institution showed considerable debits to the account of the premium so paid. The direct loss thus sustained by the operation was amply counterbalanced, however, by the influx of Bullion to a large amount, which enabled the Bank to encourage Commerce and Industry, at remunerative but not oppressive rates of Interest, and the increased business thus done by the Bank supplied the means to liquidate the debit originally resulting from the operation. The benefit bestowed upon the nation by the increase in the solid Medium of Exchange can scarcely be estimated in figures, but it is made strikingly apparent in the improved condition of the people at large. The Bank of France being, in a great measure, a Government Institution (not, like the Bank of England, the mere Banker of the State), the policy pursued by its authorities has naturally something of national importance in it.

However absolute the belief may be in the infallibility of the well-known rule of trade of giving value for value, we think it will be admitted, at least, that the almost continuous absorption of Gold Bullion by France, ever since the time when the premium on Gold was first offered, which, let it be remembered, was in

the first, unsettled years of the present political system, is a very singular fact.

There is no longer any need now for the Bank of France to offer a premium for Gold, for the desired result has been fully attained, and France rejoices at present in the possession of a sufficient stock of Gold. The Government of the Bank of France has also since then endeavoured to assimilate the position of that Institution to that of the Bank of England; but the important fact remains that its previous policy with regard to the purchase of Gold at a premium has turned out a great success.

And this fact would seem to argue in favour of the assumption that the same system which has proved so successful in France would answer equally well in England, whenever it might be deemed desirable or necessary to attract Bullion to the country, by offering a premium on the article. The objection, which we are prepared to hear urged, that the adoption of the same policy on our part would be *un-English*, ought surely not to be permitted to weigh against the manifest advantages of the plan.

Let us now compare the more immediate effects of the two systems as pursued respectively in France and in England. The charge for the premium on Gold in France, both principal and interest, had, of course, to be borne ultimately by the trade of the country. The equivalent which had to be furnished in return for the Gold must have suffered some slight depreciation. Although the prices of commodities were not violently

affected, yet they certainly must have undergone some abatement, to permit their being more extensively exported, as an equivalent against the Gold received. There can be no doubt but that this was really the case ; however, the action proceeded so gradually and steadily that the disturbance attending it was barely perceptible ; and the great stimulant applied to Commerce and Industry in all directions compensated amply for it.

Assuming now, for the sake of argument, that the offer of a premium on Gold attracted to the vaults of the Bank of France five millions sterling per annum over and above the ordinary supply, taking the average premium paid at 2 per mille, or $\frac{1}{5}$ per cent., this would make a charge of £10,000 to be borne by the Bank, or the Government, or the People,—upon whom it must of course ultimately have fallen.

On the other side, whenever the Bank of England is short of Gold, the rate of interest is suddenly raised. The legitimate profits made now-a-days by merchants are but small, and a serious rise in the rate of discount is quite sufficient to absorb them altogether. This rise at once affects everything connected with business, the value of contracts, of staple commodities, &c., &c. Commerce and industry find themselves suddenly arrested, and gripped by the throat, as it were, so as to render them absolutely helpless : no wonder, then, that ruin should follow in the train of such proceedings ! If speculation and inflation alone were struck down and arrested in their headlong career, and were made to pay the penalty, no great

harm would be done; unfortunately, the effect of the "screw" put on by the Bank does not stop there, but it strikes down equally all legitimate business, and forces it to submit to a ruinous discount, or to keep altogether out of the market. Independent of this stoppage and ruin, what is the direct pecuniary cost to the trade of the country?

Supposing the average amount of Bills under discount in London to reach the sum of 120 millions sterling for three months, and the interest thereon to be raised from 4 to 8 per cent., this would give a loss of 1 per cent. for this period of three months, equivalent to a gross loss of £1,200,000 upon the total amount of Bills under discount—a loss to be borne entirely by commerce! and if Bullion, as certainly was the case in 1866 and 1867, still declines coming over here, notwithstanding the exceptionally high rate of interest exacted by the Bank, this loss is likely to be doubled and quadrupled.

Whereas, if the Bank were to offer a premium on Gold, within prudent limits, say $\frac{1}{8}$ to $\frac{1}{4}$ per cent., and five millions sterling—sufficient at all events to greatly relieve the market—were obtained thereby, the cost would only be some £10,000 to £12,500, which the Bank might easily make up again by a *moderate* increase of the rate of discount, and which would ultimately fall upon the general public.

Provided always then that we be right in our conclusions regarding the effect which the substitution by the Bank of England of a variable for a fixed price of Gold is likely to exercise upon the importation and

exportation of the Precious Metal, the premium to be paid upon the article by commerce would be quite insignificant in comparison with the heavy extra rate of interest usually exacted under the present system in times of pressure.

The author, in placing these considerations before the reader, does not wish to be understood to advance them as his own, but he is simply desirous to bring them forward with a view to open a question which has an important bearing upon the whole subject of Finance.

Important questions of this kind should not be disposed of dogmatically, or *ex cathedra*—(and we conceive that this would be done if the sweeping doctrines of the balance of trade alone were permitted to supply the grounds for the decision)—but they demand and deserve the patient attention and the serious study of all parties concerned in their proper solution. The author is quite aware that the adoption of the suggestion here made would involve changes in the system of the Bank of England that may run counter to the doctrines and disposition of our leading financial authorities. It may also be that the general adoption of the proposed Universal Coinage (supposing it should take place) will tend to modify, in some measure, the antagonistic position in which nations now find themselves placed to each other with respect to money matters, and that there may be no need then to have recourse to the preventive measures here suggested, to guard against the recurrence of such Crises as the one in 1866.

But so long as matters are allowed to remain in *statu quo*, we cannot shut our eyes to the ugly fact that our commercial Crises here are too severe, and that the remedy hitherto applied to meet them has too much of the character of *kill or cure* about it, to be deemed satisfactory by prudent people; and, above all, that other countries are much less subject to violent financial commotions than England, and that the means they resort to to combat and mitigate the evil effects of over-speculation are of a gentler and subtler nature than our favourite remedy can claim to be.

The Policy of the French Bank to purchase Gold at a premium was, of course, attacked at the time by English financiers, upon the broad grounds of a departure from the sound principles of free trade, and in the fullest reliance upon the infallibility of the system pursued by the Bank of England.

There are some minor matters connected with the treatment of Bullion in England, which are, in our opinion, susceptible of improvement. Considering the high importance of everything connected with the question of Bullion in a country dealing so largely in the article as England does, we trust we may not be accused of an over-strong tendency to hypercriticism, if instead of chaunting the praises of our financial institutions as they actually exist, and of matters as they are managed now (which would be a much easier task, no doubt, but certainly also a most unprofitable one), we venture to point out what we consider the defects of the present system, and to suggest how these defects

might be remedied—and this even at the risk of laying ourselves open to the additional charge of repeating over again, perhaps, what we have had occasion to say already in other parts of this Work.

We must then insist here once more that a country like England ought to be fairly in advance of all others in all matters touching Bullion and Coinage, whether bearing upon the principle of the question, or simply of a technical nature.

It is precisely in the latter respect that we are positively lagging behind other nations, in so far as the treatment of Bullion is concerned.

Gold Bullion is weighed here to 12 grains exact, equal to about 2 Shillings per Bar. If the fraction happens to be $11\frac{3}{4}$ grains only, it does not count. Why should we not weigh to a Penny, or even to a Farthing exact? With the scales which are made now-a-days we can even weigh closer than this. For Silver fractions not exceeding a half-ounce are not taken into account, which makes an average difference of 2s 6d per Bar.

But it is in Assaying chiefly that we injure our hold on Bullion; we can *Assay* to $\frac{1}{10000}$ th exact, but we *Report* only to $\frac{1}{8}$ th grain or $\frac{1}{768}$ th fine. Gold Assayed as 916·67 is called Standard; if it Assays 916·59 it is called $\frac{1}{8}$ th grain Worse than Standard. Now $\frac{1}{8}$ th grain Worse is only 915·36, so that our Report is incorrect to the extent of 1·23 Millième.

That our present system of weighing Bullion and reporting Assays works to our disadvantage is quite evident, if we reflect that the Exchanges will always

regulate themselves upon the Coinage basis, and that accordingly, when Bullion is due to us from abroad, we keep it out of the country by adhering to our old-fashioned way of valuing it below its actual worth; and, on the other hand, when Bullion is leaving us, we, acting upon the same system of valuation, give more value than we charge for, thus actually promoting the exportation of it. This defect in our system works therefore against us both ways.

It may be perfectly proper to argue that it is not the province of the English Government to interfere in what may be regarded in the light of a private enterprise; but in a matter so important as Bullion the Government surely may claim the right of laying down certain rules for the public benefit; the more so as the State has to provide the Coinage, and has the exclusive privilege of doing so.

We are of opinion also that the State would do wise to supply the public with every possible facility for dealing in Bullion, so as to impart the highest attainable degree of perfection to this most important business. Gold may either be sold in open Market to private parties, or it may be sold to the Bank of England. In the latter case, before the article is taken to the Bank, the Bars have to be *re-melted at a private* melting house; they are then Assayed for the Bank by *private* Assayers, at the charge of the seller. All this may work fairly enough, but certainly no one will venture to maintain that it is the best and most satisfactory way of doing the business. In the United States Mint or Assay Offices Gold Bullion is melted

and assayed, and has its exact value officially stamped upon it, at a round charge of 6 Cents per 100 Dols., or about $\frac{3}{4}$ per mille on the value. This is a great public convenience and advantage, besides saving the expense of Coinage, as the Bullion Bars so stamped are preferred for exportation.

A similar institution over here, in direct connection with the British Mint or with the Bank of England, would certainly be a public benefit, and would, besides, more than amply repay expenses. The melting of Gold now costs $\frac{1}{4}$ d per oz. for nuggets, lumps, coins, &c., and $\frac{1}{2}$ d per oz. for Gold dust. This amounts on £1000 to about 5s 6d, making thus, with 4s 6d for Assays, 10s or $\frac{1}{2}$ per mille—a remuneration for which an establishment such as here suggested might surely well afford to undertake the duty *officially*.

The refining of Bullion at the lowest practicable rate, by an establishment under the immediate control of the Authorities of the Mint, is also a matter worth considering, as it has a direct bearing upon the retention of Bullion in the country.

The defects pointed out here in our present system of valuing Bullion simply afford Bullion Dealers a “margin” for realising extra profits; whilst, small as the differences resulting from these defects may appear to be when looked at singly and separately, they nevertheless form an aggregate sufficiently important to place this country at a disadvantage as compared with other nations.

CHAPTER III.

THE PARIS CONFERENCE ON INTERNATIONAL COINAGE.

THE adoption by all Nations of a uniform system of Coinage would materially promote the progress of civilisation, and the general welfare of mankind. It would not only exercise a direct beneficial influence upon the commercial transactions between the more civilised nations, but even semi-barbarous populations would soon learn to appreciate the signal advantages of a set of Coin universally recognised as the general Standard of value, and this would necessarily tend to draw them into closer connection and intercourse with their more advanced brethren. But, even independently of these higher considerations, and regarded simply in the light of a direct question of Profit and Loss, the introduction of a Universal Coinage could not but prove highly beneficial to the interests of the Mercantile and Trading Community.

At present the balances of trade between the nations are settled by shipments of Bullion or of Coin. Frequently the Bullion shipped is the result of the Re-melting of Foreign Coin; and the Coin sent abroad mostly requires melting down to be converted into the Currency of the Country into which it is imported.

These operations, of course, cost Money; besides involving a direct loss of the Precious Metal, which, though small in itself, acquires some importance from the frequency and extent of transactions of this kind.

A system of Universal Coinage would not only enable us to do away with these charges and losses; but, all nations being agreed upon the weight and fineness of the Coin, the Bullion in the vaults of the Banks might be regularly converted into it as a much more convenient form to hold as security than Bullion is; and the Coining of all this Bullion would give steady occupation to the Mints.

All the present complications of foreign Exchanges would be at once removed, and the greater simplicity in accounts to which this would lead would be an immense boon to the Trade and Commerce of the World.

Eminent writers on Financial and Commercial matters have, from time to time, warmly advocated the introduction of a System of Universal Coinage; but their efforts in this direction seemed somehow always doomed to remain unavailing. Everybody was ready and willing to admit the truth of their facts and reasonings, and the desirableness of the introduction of a uniform system; but everybody regretted that there should be so many opposing interests and other difficulties in the way to prevent the realisation of the general wish. The Paris Exhibition in 1867 at last afforded a suitable opportunity for a vigorous effort on the part of the advocates of the Universal Coinage System to discuss the question, with a view of arriving at some determinate conclusion

in the matter, and of devising some feasible plan of carrying the project of a Universal Coinage into practical effect.

To this end many of the leading men then in Paris from all countries of the world, including Delegates and Commissioners of all the Foreign States, and of the Scientific Societies then represented at the Exhibition, —were invited, at the instance of the French Government, to meet for the purpose of organising a Monetary Conference. Professor Leone Levi attended this Conference as one of the English Delegates. There was another Conference held about the same time at the Foreign Office in Paris, which was attended by Official Delegates nominated by the different Governments, and had for its special object the general discussion of the great International Coinage question. We think we cannot do better than give extracts from Professor Levi's report of the Meetings of both Conferences, made by the learned Professor in a Lecture delivered by him before the Society of Arts, on the 27th of November 1867. After giving an account of certain Meetings and Conferences held on the question of uniformity of weights, measures, &c., on which he states the Conference agreed very well, the Professor proceeds to the discussion of the International Coinage question, on which he reports as follows:—

Upon the subject of Coinage much greater difficulty was experienced, and after considerable discussion, in which the Austrian Delegate, Baron de Hock, the American Commissioners, Mr. Ruggles and Mr. Kennedy, took a leading part, the Committee submitted to the Conference the following distinct propositions:—

1. The first condition to be fulfilled is the adoption, by the dif-

ferent Governments interested in this question, of the same units in the issue of their Gold Coins.

2. It is desirable that such Coins be everywhere Coined nine-tenths fine.

3. It is desirable that each State should introduce among its Gold Coins one piece at least of a value equal to that of one of the pieces in use among other States interested, so that there may be among all the systems a point of common contact. From that each nation will afterwards endeavour to assimilate gradually its system of Coinage to that which may be chosen as a uniform basis.

4. The series of Gold Coins now in use in France, being adopted by a great part of the population of Europe, is recommended as a basis of the uniform system.

5. Whereas, in consequence of accidental and happy circumstances, the most important monetary units may be adapted to the French Gold piece of five francs, by means of very small changes, this piece seems the most convenient to serve as a basis of a monetary system, and the Coins issued upon such a basis may become, as soon as the convenience of the nations will permit, multiples of this unit.

6. It is desirable that the different Governments should decide that the Coins issued by each nation, in conformity with the uniform system proposed and agreed, should bear legal currency in all their countries.

7. It is extremely desirable that the system of double Standards be abandoned wherever it yet exists.

8. It is extremely desirable that the system of decimal numeration be universally adopted, and that the money of all nations should be of the same fineness and of the same form.

9. It is desirable that the Governments should come to an understanding for adopting common measures of control, so as to guarantee the integrity of the Coinage both when issued and whilst in circulation.

It will be observed that these propositions laid down no specific scheme of universal coinage. They took Gold Coins for their basis because most nations had already adopted it as the sole Standard. Mr. Ruggles stated that between 1851 and 1865 the United States,

France, and Great Britain issued collectively, in round numbers, £420,000,000 in Gold Coins to £24,000,000 in Silver Coins. The Congress adopted the fineness of one to ten as already extensively in use. It simply aimed at one point of accord in the different systems of Coinage, in having one piece at least alike everywhere; and fixed upon the five franc piece in Gold as on the whole the most convenient for the basis of the uniform system.

It is quite possible that were we to start a new system, irrespective altogether of the existing conditions, a better and a more scientific plan might yet be suggested, but the Conference had a practical object in view, and we had to consider not what might be theoretically the most perfect, but what under present circumstances could best be attempted. When, therefore, M. Michel Chevalier proposed a totally new system—to take a piece of five grammes of Gold, nine-tenths fine, as the universal monetary unit—it was felt that, whatever might be its merits, it would be impossible to disregard the immense amount of Coinage of Silver and Gold now in existence, which would require to be altogether withdrawn. The new Coin suggested would agree with no existing Coinage, and therefore its introduction would be quite impracticable. For my part I objected to taking the piece of five francs in Gold as a unit, it being too small and too easily lost. I proposed to substitute for it the ten franc piece, but it was agreed that the word “unit” attached to the five francs, as at first inserted in the 8th proposition, should be omitted; and the proposition as adopted simply laid down that value as a basis of calculation, the different nations being quite at liberty to choose for their unit any multiple of the same, say 10, 20, or 25 francs. M. Wolowski, so able and so eloquent, fought hard in favour of the double Standard. He argued in favour of leaving it optional with debtors to pay in Gold or Silver, and thought it inexpedient to fix on the Gold Standard for all nations, having regard to the changes which have occurred and may still occur in the production of Gold and Silver. M. Wolowski was, of course, answered that the system of a double Standard was unjust in itself, since it left the creditor at the mercy of the debtor, in allowing him to pay in the least valuable metal; that if it was desirable that the Standard of exchange should be as little as pos-

sible subject to oscillation of value, it was certainly inexpedient to subject it to the oscillations affecting both Gold and Silver ; whilst the adoption of a double Standard would render any agreement with England and America impossible. Thus the discussion ended, and the resolutions proposed passed almost unanimously, with some verbal alterations.

We must now turn our attention to the Diplomatic Conference, which was held about the same time at the Foreign Office, especially about International Coinage.

I have already stated that France, Italy, Belgium, and Switzerland, towards the end of 1865, concluded amongst themselves a Monetary Treaty, the negotiation of which is greatly due to M. de Parieu, Vice-President of the Council of State, and Member of the Institute. And it was with the view of extending the provisions of that treaty to other countries that the Diplomatic Conference was summoned. The two Conferences differed essentially in their constitution, though their ultimate object in reality was one and the same. The Diplomatic Conference was attended by official delegates nominated by the different Governments. The Conference was opened on the 17th June, and ended on the 6th of July 1867 ; and, instead of having any resolutions previously prepared by a committee, the Conference first agreed upon a *questionnaire*, or a series of points to be discussed, and then entered deliberately on the questions embraced, each member speaking and voting affirmatively or negatively on the alternative submitted. The first question was, What is the best means to realise the uniform system of money ? Is it by the creation of a system altogether new, independent of the existing systems, and, in that case, what should be the basis of that system ; or, by a mutual co-ordination of the existing systems, having regard to the scientific advantages of certain types and to the number of persons who have adopted them ; and in that case, which monetary system should be principally taken into account, subject to any improvement of which it may be capable ? Here, too, as in the other Conference, some members, especially from Belgium, expressed a preference for a system entirely new, but, after some discussion, the Congress voted unanimously in

favour of the second alternative, adding that the system agreed upon by the Monetary Convention of 1865 should be the one principally to be taken under consideration.

The next question referred to the Standard, and having regard to the decided advance made everywhere towards the adoption of a Gold Standard, it was unanimously resolved, with the exception of the representatives of the Netherlands, "That it is not possible to attain the desired uniformity, or even a partial coincidence, on the basis and on condition of the exclusive adoption of a Silver Standard, but that it is possible to attain it on the basis of a Gold Standard, allowing each State to preserve the Silver Standard in a transitory manner. The latter condition being necessary for States such as Prussia, Sweden, and the Netherlands, where the Silver Standard alone is still maintained." Then a resolution was added, supported by all the representatives except those of Prussia and the Netherlands, "That the advantage of internationality which the Coinage taken for common Standard would possess, is not itself a sufficient guarantee for its being maintained in circulation in all the States, but it is necessary to stipulate that, in the countries which continue to use the Silver Standard only, and in those which have a double Standard, the relation between Gold and Silver should not be established on too low a footing, in order to give due facility for the practical introduction of the Gold Coinage." It appears that at present the relation of Gold to Silver in Prussia is 1 to 15·45, in Spain as 1 to 15·48, in France as 1 to 15·50, and in the United States as 1 to 16, about.

The Congress then entered on the difficult question of the common denominator, and, having first unanimously agreed that, for the success of the monetary unification it is necessary to fix types having a common denominator for the weight of the Gold Coin, with an identical fineness of $\frac{9}{10}$ fine, it was decided by a majority of 13 against 2, the representatives of England and Sweden having voted against, and those of Russia, Bavaria, Baden, Wurtemberg, and Belgium having abstained from voting, "That the common denomination should be the piece of 5 francs." Though many members spoke in favour of the reduction of the dollar to 5 francs, and of the pound sterling to 25 francs, M. Wallenberg, the delegate

from Sweden, preferred the 10 francs in Gold ; and M. de Parieu himself said that that piece would be specially convenient to France, since she would only require to change the place of the comma to express the new unit, whilst, moreover, the piece of 10 francs, under the name of ducat, a piece of about the same value, had once a universal circulation.

As regards the reduction of the pound to 25 francs, Professor Graham, the Master of the Mint, stated that even if it was true that the difference of 20 centimes was included within the limits of tolerance, it is, nevertheless, a fact that the English Government considers itself bound in honour not to take advantage of it. There would, therefore, be much inconvenience in having in circulation Sovereigns of 25·20 should the issue of new Sovereigns reduced to 25 francs be resolved upon, and a re-coinage would be necessary. In his opinion, if the piece of 10 francs were adopted, it would have an advantage over the piece of five francs. It was then agreed by all, except the representatives of Prussia, Baden, and Wurtemberg, who abstained from voting, "That it would be useful that the types of Coinage determined by the Monetary Convention of the 23rd December 1865, should be, in the interest of unification, and, consequently, of reciprocity, completed by new types, as per example of 25 francs." But when the proposal was made that a piece of fifteen francs be also added, the representatives of only seven countries voted in favour of it, those of seven countries voted against it, and those of six, including Great Britain, abstained from voting. It was then unanimously agreed that the measures which may be adopted by the Governments of the different States in order to modify their respective monetary systems, in accordance with the basis indicated by the Conference, should be made as much as possible the subject of Diplomatic Conventions. That soon after the reception of the answers which may be given by the different States to the official communication which will be made to them of the labours of the Conference by the French Government, that Government may, if necessary, call another Conference. But as to the time by which such answer should be given, the representatives of ten countries voted that it be given before the first of February next, those of five voted that it be given before the first of October

1867; those of the United States voted for the 15th of May 1868; and those of Great Britain for the first of June 1868; the representatives of France and Spain having abstained from voting. In substance, the resolutions of both Conferences perfectly agree, the principal recommendation consisting in taking advantage of the particular position in which the five franc piece stands towards the dollar on the one hand, and the pound sterling.

It now remains for me to consider the position in which this country is placed in relation to these two Conferences. Officially, I may say the United Kingdom is in no way pledged by their resolution, the Government having maintained itself almost altogether passive as regards the one and the other. The Conference of the Palais de l'Industrie owed its origination to the Metric Committee of the British Association and the British Branch of the International Association; and in the International Committee no official member was deputed by her Majesty's Government, though the British Commission was nominally, at least, represented in it. At the Diplomatic Conference, the Master of the Mint and Mr. Rivers Wilson, though officially deputed, were expressly precluded from in any way binding this country to any course. Nevertheless, it is vain to imagine that this country can remain indifferent to what is passing in all the rest of the world; and it would be far better for her to place herself, by a spontaneous and generous policy, at the head of those measures which tend to improvements in human society, than to lag behind till necessity and self-interest compel her to accept what is already irrevocably settled. The measures advocated by these Conferences affect on the one hand our entire system of weights and measures, and on the other the basis of our Coinage and our entire system of accountancy. As regards weights and measures, the only course left is the early introduction of the metric system, pure and simple, as it exists in the greater part of Europe, and in different States of America. The Act of 1864, which renders the use of it permissive in this country, is manifestly imperfect. It is simply of a negative character, removing the previous illegality. It does not provide for Standards, and it is a question whether any one could actually use the metric weights and measures, since they cannot be stamped. What is wanted is

a more definite measure, preparing the way for the early substitution of the metric system, for the present uncouth, complicated, and conflicting practice. In other countries the law provides that after three, five, or ten years' time, for preparation, it shall become compulsory; and I am satisfied a similar method must be adopted in this country, if we wish the reform to be introduced in our time at least. Meanwhile, the introduction of the system should certainly be encouraged in all the schools, and demanded in all schools receiving grants from the Privy Council; and an examination in the same should also be required of teachers in the Normal Schools, and candidates for Government Certificates. Let us hope that during the next Session of Parliament some measures may be introduced for bringing this important object to some practical issue.

As regards Coins, the proceedings of the Conference have greatly simplified the question by leaving us the only alternative as to the mode of adapting either the Gold piece of five francs, or any of its multiples, to British Coinage. To my mind, a Gold unit of five francs, or 4s 2d, is decidedly too low; the choice lies between reducing the Sovereign to 25 francs or taking the 10 francs as a new unit. The reduction of the Sovereign to 25 francs is connected with the following difficulties. The difference between 25 francs and 25·20 francs may appear small, yet it cannot be ignored in making that arrangement. It will not do to say that many Sovereigns now circulate under weight. The Government does not recognise it; nor could we declare that to be 25 francs which is in effect 25·20 francs. A new Coinage would be necessary, and in that case either we should have in circulation two kind of Sovereigns, differing very slightly in value, or we should need to have resort to the issue of a pound note to assist the withdrawal of the large number of Sovereigns now in circulation. With the Sovereign as a unit there would never be an easy analogy between ours and the one leading system prevalent in almost every other European country. With a unit so large, requiring three decimal fractions in all accounts, the best advantages of the decimal system, viz., the brevity and saving of time, are practically lost. Lastly, not to mention more difficulties and objections, the counting of every sum

less than a pound by mils seems to me exceedingly awkward and complicated. The main advantage ever adduced in favour of retaining the pound as a unit is that it is universally known in the trading and banking circles of the world, that it is associated in this country with every calculation of value, and that it is a well-defined and invariable value. But if all European and American countries enter the Convention on the terms of the Conference, the pound will be the Coin least known in Europe. There would doubtless be much inconvenience in changing the unit of value, but the difficulty is greatly exaggerated. And as for the invariability in the value of the sovereign, the same will apply to any Coin which may be legally declared by this country as the unit of accounts. These are some of the many obstacles to our adopting the plan of reducing the pound to 25 francs, and making that the unit of a decimal system for this country. But there is another plan, which appears to be far preferable, viz., the taking of the Gold piece of 10 francs, equivalent to 100 pence of present money, as a unit. The present penny is practically the same in value as the ten centimes. Let a Gold piece representing one hundred pence, which might be called a ducat, be issued and coined of the exact value of ten francs. Let this Coin for a time be put in circulation as a token only, or as a Coin of convenience, in which manner it would make no difference if its real value be slightly inferior to its nominal value, and let every encouragement be given to use this hundred-pence piece as a unit. Should it prove popular and convenient, a ten-pence piece might also be issued, to take eventually the place of the present shilling; and when the time comes for the ultimate declaration of the ducat as the unit of value, the exact relation of the same to the sovereign would be fixed, and the difference between the sovereign and the ducat would be duly allowed in exchange.

The convenience of this method is very decided. It would be strictly decimal. It would be plain and simple for computation. In a ten ducat piece, equivalent to one hundred francs, we should have an excellent Coin of accounts for large transactions, as in the tenth of a penny we might, if required, have a Coin adapted to the most minute business of life; and, above all, it would place us on an exact level with the system likely to be universal, it being a

fact that already 100 millions of people have accepted it, and probably 100 millions more will adhere to it almost immediately.

I do not wish to be dogmatic in propounding such a plan. I only suggest it for serious consideration, and I am certainly encouraged in thinking that it does in a great measure accord with many of the most valuable suggestions made to this Society some ten years ago. In the preference thus given to the ten francs rather than to the 25 francs, I speak my own mind only, the Metric Committee of the British Association and the Council of the International Association having come to no resolution on the subject. I am strongly convinced, however, that the scheme is not only sound and practical, but the only one likely to prove in the end successful and permanent. The time has come when some decisive measure must be taken, her Majesty's Government having to give answer on the subject at least not later than June next. The action of the Government will probably be either to move for a Committee of the House of Commons or to nominate a Royal Commission to consider the question. Whatever method may be preferred, let us hope that the inquiry will be instituted in a liberal spirit, and with an intention to come to practical and final conclusions.

From this account it will be seen that two principal resolutions were arrived at, viz. :—

(1.) A resolution in favour of the universal adoption of the Gold valuation.

(2.) A resolution in favour of the adoption of the Gold Five Francs piece as the representative type of the universal unit or integer of the proposed new International Coinage; accordingly in favour of the adoption of the French Franc system generally.

With regard to the first of these resolutions, we purpose to show in the next chapter that the absolute rejection of Silver as a Standard of Value would be a most unwise and dangerous proceeding, and that it

would be a far better and safer course to establish the Double Gold and Silver Valuation.

And as regards the second resolution, we shall endeavour to prove, in a subsequent chapter, that, although the Five Francs piece is, no doubt, a suitable type for Silver Coin, it is not so for Gold Coin, and that it would be far more practical to take for type instead a *Five Shillings* Gold piece, and to substitute the Shilling for the Franc generally.

CHAPTER IV.

DEFENCE OF THE DOUBLE VALUATION.

THE controversy between the advocates of the Single Gold Valuation and the defenders of the Double Gold and Silver Valuation, which, at the Monetary Conference of 1867, in Paris, ended in a resolution adopted by that meeting in favour of the Single Gold Valuation, has excited but little attention in England. The reason is plain: England's Monetary system is already based upon the Single Gold Valuation, and as the Paris Conference recommends its adoption by all nations, England is not threatened with any change in this respect, but rather holds the proud position of having set the right example.

The author of this volume is an advocate of the *Double Gold and Silver Valuation*. In venturing to oppose the decision arrived at in Paris, he is quite aware of the difficulty of the task which he undertakes, and that his opinion is likely to weigh as nothing in the scale against the authoritative decision arrived at by a body of eminent men, delegated by the Governments of the leading nations of the world, and by many scientific bodies, and best acquainted or, at least, taken to be best acquainted with Monetary

matters. An attempt to advocate the Double Valuation in England, the very stronghold of the Single Gold Valuation, which has now victoriously maintained its position there for more than half a century, seems all the more difficult and perilous for the strong bias in favour of it naturally entertained by many English Financiers. Still the Author takes heart to develop his views, from the fact that the Delegates who attended the Paris Monetary Convention of 1867 were by no means unanimous in their resolution to adopt the Single Gold Valuation; but that a respectable minority of them, men of acknowledged experience in Monetary matters, warmly advocated the Double Valuation. Some of the Delegates, notably those representing the principal countries where Silver is the valuation, abstained from voting on several vital questions connected with the proposal. The Eastern nations had no representatives at the Conference, and, as India, which forms a portion of the British Empire, is one of the most important Silver-holding countries, the question of the Single Gold, or the Double Gold and Silver, or the Single Silver Valuation, still claims consideration, if not from an exclusively English, at all events from a British Imperial point of view.

The introduction, universally, of the Single Gold Valuation, as proposed by the Paris Conference, means:

That Gold alone shall in future be used for payments, and that Silver shall only be used in a subsidiary or divisionary character. Pay-

ments in Gold Coin, from the smallest possible sum up to any amount, shall alone be lawful, whereas payments in Silver Coin shall be lawful only to a limited extent, not exceeding the value of one or two pieces of Gold.

It is not in these precise terms that the proposition is stated, but in reality its effect will be of this nature. In England the payment in Silver is limited to £2, and, whether the other States adopt the same limit, or one below or above it, matters little; the supremacy of Gold, as the only legal tender, can only be enforced by the suppression of Silver in the contrary direction, stopping short only of final demonetisation at the limited legal tender.

The example and model which England affords in this respect may for the present be taken here as that which the world at large is supposed to be invited to copy.

The ordinary reader of this book may not have had occasion to consider the vast importance of this proposition, especially if, as an Englishman, he sees therein nothing more than an approval of the Currency system of his own country. Certain other nations, however, have a much deeper interest in the matter, for the proposition involves an almost total revolution in their monetary systems; it threatens the legal destruction of the valuation in Silver upon which they have hitherto relied.

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Dismissing from our minds the partiality for our own English system, and looking upon the matter from a wider and more universal point of view, it may indeed be affirmed that mankind at large, all nations, all classes of society, and every individual, have a most material interest in the right decision of this question. This interest, and the extent and importance of it, may not seem quite patent now to every reader of this volume; but the time is sure to come when the effects which the ultimate decision and final settlement of the question will have upon the trade of the world may forcibly open the eyes of every one to the true extent and importance of that interest.

In order to place the whole subject before the reader in a convenient form, we propose successively to consider :

1. The present relative position of Gold and Silver in the Monetary Systems of the World.
2. The probable consequences of the universal adoption of the Single Gold Valuation, in so far as the future position of Silver, and its value, are likely to be affected thereby, and the serious injury to general prosperity involved therein.
3. The general state and aspect of the question, and the grounds upon which the advocates of the Single Gold Valuation recommend the introduction of the same, and the fallacy of which we, defending the Double Valuation, propose to demonstrate.

1. *The present relative position of Gold and Silver in the Monetary Systems of the World.*

In the second part of this book, in the Chapter on Pairs of Exchange, we have seen the several Standards of Valuation respectively in force in the different countries. We find that—

THE GOLD VALUATION PREVAILS in Great Britain, Portugal, Turkey, Brazil, Chili, Australia, and other English Colonies.

THE GOLD AND SILVER VALUATION in France, Belgium, Italy, Switzerland, Spain, Greece, the United States, New Granada, Ecuador, and Peru.*

THE SILVER VALUATION in North Germany, South Germany, Hamburg; in Austria, Holland, Sweden, Norway, Denmark, Russia, Mexico, Central America, Bolivia, in the East Indies, in China, and Japan.†

* It must here be remarked that in France, as well as in the United States, a step towards the adoption of the Single Gold Valuation has already been taken; but by law the Double Valuation is still in existence. In Spain the law is not very decisive on the point; we include this country here under the second head, because practically the Double Valuation is prevalent. (See respective headings in Part II, Chapter I.)

† In the La Plata States, where Paper Money is paramount, the position is undecided; in Venezuela also. Persia, the African States, and others, we leave out of the question, as a clear law on the Standard of Valuation does not seem to exist there.

In the countries where the Single Gold Valuation prevails Gold Coin alone is fully legal tender, and forms thus the far largest portion of the metallic circulating medium, the use of Silver being restricted by the operation of the law of legal tender, and Silver Coin forming but a small portion of the Currency.

In the countries where the Double Gold and Silver Valuation prevails Coins of both Metals are legal tender; and although, in so far as regards the respective quantities of Gold Coin and of Silver Coin in circulation, the Gold vastly preponderates over the Silver in France and in the United States, yet the Silver Coin forms still an important element; and in some countries — Spain, Greece, Ecuador, Peru — the Silver Coin is much more abundant than the Gold.

In the countries where the Single Silver Valuation prevails, Silver Coin is the only legal tender, and Gold Coin is an article of merchandize, varying in price. In Germany, Holland, &c., it is true, a great deal of Gold Coin is in circulation, but Silver Coin is nevertheless the ruling value; the Banks hold their stock of Bullion chiefly in the form of Silver Coin or Bars. In Norway, for instance, Gold is never coined. In India, notably, Silver reigns paramount; and, up to this time, Gold Coin has not yet made its way with the Natives.

The following Table shows the proportionate value at which Gold and Silver are held in the different Coinages.

SINGLE GOLD VALUATION.

Great Britain ...	...	1 to $14\frac{1}{2}$	The limit of tender to which Silver is restricted may generally be taken as £2.
Portugal ...	...	1 „ $14\frac{3}{4}$	
Turkey ...	...	1 „ $15\frac{1}{10}$	
Chili ...	...	1 „ 15	
Brazil ...	...	1 „ $14\frac{3}{10}$	
Australia ...	...	1 „ $14\frac{1}{2}$	

DOUBLE GOLD AND SILVER VALUATION.

France ...	...	1 to $15\frac{1}{2}$	Payments are legal in either Gold or Silver.
Belgium ...	...	1 „ $15\frac{1}{2}$	
Italy ...	...	1 „ $15\frac{1}{2}$	
Switzerland ...	...	1 „ $15\frac{1}{2}$	
Spain ...	...	1 „ $15\cdot477$	
Greece ...	...	1 „ $15\frac{1}{2}$	
United States ...	...	1 „ 16*	
New Granada ...	...	1 „ $15\frac{1}{2}$	
Ecuador ...	...	1 „ $15\frac{1}{2}$	
Peru ...	...	1 „ $15\frac{1}{2}$	

SILVER VALUATION.

North Germany ...	...	1 to $15\frac{1}{2}$	These proportions are only approximate, as Gold Coin varies in price.
South Germany ...	...	1 „ $15\frac{1}{2}$	
Hamburg ...	...	1 „ $15\frac{1}{2}$	
Austria ...	...	1 „ $15\frac{1}{2}$	
Holland ...	...	1 „ $15\frac{1}{2}$	
Sweden ...	...	1 „ $15\frac{1}{2}$	
Norway ...	...	1 „	
Denmark ...	...	1 „ $15\frac{1}{2}$	The Half Imperial fixed at $5\frac{3}{4}$ Roubles.
Russia ...	...	1 „ $15\frac{1}{2}$	
Mexico ...	...	1 „ $15\frac{1}{10}$	Gold Coin of uncertain fineness.
Central America ...	...	1 „ $15\frac{1}{10}$	
India ...	...	1 „ 15	The Mohur = 15 Rupees
China ...	...	1 „	Gold Coin not used.
Japan ...	...	1 „ $15\frac{1}{2}$	{ By the recent reduction of the Gold Cobang.

* This refers only to the whole Dollar piece ; the Silver Coins below the whole Dollar are at 1 to $14\frac{7}{8}$.

It is of importance now that we should arrive at some conclusion in reference to the total quantity of Gold and Silver Coin and Bullion, and its proportionate distribution in the various Monetary systems. The question might be widened so as to include not only Coin and Bullion, but also articles made of the precious metals immediately available for value; we will, however, limit it for the present to Coin and Bullion.

It is impossible to arrive at a result in this respect by statistical research. The Mintage returns of England, France, the United States, and other countries, as well as the movements in Bullion between the various countries for a number of years, are in themselves complete enough, indeed; but they do not embrace the whole field of the subject; and, even if they did, the re-melting and re-coining continually going on would interfere with the correctness of the data. As regards the old stock of Gold and Silver, and Coinage operations before the ages of statistical science, we have no data at all to go upon, beyond the varying surmises and estimates made by several writers on the question.

Want of space prevents us from entering into a detailed and minute examination of this subject, but, basing our figures upon the most trustworthy estimates, we may assume that :—

Before the discovery of the Californian and Australian Gold fields the amount of Silver Money in the World exceeded that of Gold Money, it being estimated that there were about 300 millions of Gold in circula-

tion to 480 millions of Silver.* Since then some 400 millions Sterling have been added to our stock of Gold, whilst our Silver store has increased only by about 70 millions;† which makes the present proportion accordingly 700 millions Gold to 550 millions Silver. This estimate, which includes Coin and Bullion, but excludes all Gold and Silver in the form of ornaments, utensils, or in any other shape not designed for monetary purposes, may not be quite accurate, though it is based upon careful calculation, and supported by good authority. We have already remarked even that the estimate of Silver seems to us too low. Be this as it may, however, an error of a few per cent. more or less on either side cannot much matter, so long as the proportions here given, viz : 700 millions Sterling Gold Money to 550 millions Sterling Silver Money, fairly represent the facts of the case; it is at all events sufficiently accurate to enable us to arrive at correct conclusions upon certain points which we have here more immediately in view.

It is equally difficult to give a correct account of the distribution of these masses of Gold and Silver.

If we look to the Coinage of England, France, and the United States of North America, to guide us in

* This estimate is not our own ; we feel inclined to take the amount of Silver then existing in Coin and Bullion at a much higher figure. It should be borne in mind, we think, that India alone has taken nearly half that sum from Europe during the present century.

† This is the supposed net increase, after making due allowances for total loss of Silver by abrasion, Silver-plating, Photography, &c.

the calculation, we find, upon the authority of Mr. Ruggles, the American Commissioner and Delegate at the Paris Monetary Conference, that these countries have, between 1851 and 1865, issued collectively, in round numbers, £420,000,000 in Gold Coin to £24,000,000 in Silver Coin. As it may fairly be assumed that the greater portion of this latter Coinage was issued by France, where the 5 Francs piece in Silver still remains legal tender to any amount, we think we are within the mark if we put the Silver Coinage of Great Britain and the United States as 1 to 20, compared with the Gold Coinage.

From Germany and Holland, and other European Silver-valuing States, we have been unable to obtain accounts, but it may fairly be surmised, when the stocks of Silver Bullion in Amsterdam, Hamburg, Berlin, Frankfort, Vienna, and the numerous Banking centres are taken into account, together with the mass of Coin in circulation, that more than one-half of the Hard Money of these States is in Silver, and that this half probably amounts to 150 millions Sterling or more. In Mexico vast quantities of Silver are held, but India and the East are the largest holders of Silver, to the almost total exclusion of Gold.

2. *The probable consequences of the universal adoption of the Single Gold Valuation, in so far as the future position of Silver, and its value, are likely to be affected thereby, and the serious injury to general prosperity involved therein.*

The Paris Conference, whilst recommending the adop-

tion of the Gold Valuation, took care at the same time to recommend that the Silver-valuing States should, whilst adopting Gold for their future Standard, continue to maintain the Silver Valuation during the necessary period of transition. Ultimately, however, all nations would have to adopt the Single Gold Valuation, to which end Laws must be introduced, investing Gold with the exclusive function of sole Standard of Value. With the universal adoption of the Single Gold Valuation it is necessary, in fact, turn which way we may, that some such law of legal tender as now exists in England, with reference to Gold and Silver, should be introduced in all other States. The English law forces the creditor to accept Gold in payment for all sums up to the largest amount; but he is not bound to take Silver Coin in payment beyond the sum of Two Pounds. Now, whether other nations adopt the same limit or not, in principle the result remains the same; but it is likely that, with the proposed universal system of Coinage, a uniform limit will be adopted. In the countries where steps towards the adoption of the Gold Valuation have already been taken, the same limit of Two Pounds for payments in Silver has been adopted as in England.

What will be the effect of this restriction upon the use of Silver? If this precious Metal is no longer to be employed as an independent Standard of value, if its monetary office for the future is to be confined to serving as a divisionary Coin merely, how much Silver Coin will in future be required for this latter, subsidiary purpose?

This question touches a vital point.

The Coinage returns of England show that there has been coined, on an average, during late years, about twenty times as much Gold Coin than Silver Coin. From 1861 to 1866, 35 millions in Gold and $1\frac{1}{2}$ million in Silver were issued by the Mint. The returns from France, England, and America, as shown before, give about the same proportion. It would seem, therefore, that in a State where the Gold Valuation prevails, it is not necessary to coin more than 5 per cent. of Money in Silver, in order to supply the public want. Let us, however, for safety's sake, double this proportion, and let us assume that 10 per cent. may be required for the universal monetary system.*

Taking this 10 per cent. as a fair and safe estimate for the future requirements of the World in Silver Coin, and, bearing in mind that we have valued Gold Coin and Bullion at 700 millions Sterling, 10 per cent. thereof, or 70 millions Sterling in Silver would be sufficient to perform the subsidiary office of supplying small change. We have estimated the quantity of Silver used for monetary purposes at 550 millions. With the partial demonetisation of the Metal we should accordingly have a surplus of 480 millions no longer required for money. What is to become of this enormous quantity of Silver? Is it likely that this immense stock, swelled constantly by the regular

* It must be borne in mind that the Gold Coins in England are withdrawn from circulation, by becoming light or by exportation, much quicker than Silver Coins. The latter have a longer life; the Mint returns are therefore not strictly guiding in the matter.

annual supply of the Metal, will find a sufficient use for utensils, ornaments, &c.; in other words, is it likely that Silver, after its almost complete demonetisation, will be used for these purposes much more extensively than it is now? So long as Silver remains at or near its present price we do not see the least chance of a more extensive use of the article in this channel. Of course the matter would be different were the price of the Metal to go down some 30 or 50 per cent. On no other terms is it likely that Silver will be so largely used for domestic purposes as to absorb a considerable portion of the enormous surplus which the universal demonetisation of the Metal would be sure to throw on the Market.

Let us suppose Silver to go down in price some 30 or 50 per cent., what would be the inevitable effect of this fall upon the Silver Coinage still remaining in circulation? The actual price at which the English Silver Coinage is issued is 66d per oz. Standard; in other countries it is issued at $60\frac{7}{8}$ d to 61d per oz., the present Market price being $61\frac{1}{2}$ d. But let the price of the Metal, regulated simply by the laws of supply and demand, fall some 30 or 50 per cent., say to 43d or 31d per oz., will any one pretend to maintain that the law of legal tender will be sufficiently powerful to keep up the nominal value of the Silver Coinage? The people may consent to take a farthing Bronze piece for a Penny, but they certainly will never agree to take Eightpence or Sixpence for a full Shilling.

The inevitable consequence of a serious fall in the Market price of Silver would therefore be to com-

pletely upset the Silver Coinage then still remaining in circulation.

The proposed partial demonetisation of Silver, coupled with the fall in the Market price of the Metal resulting therefrom, would have a most disastrous effect, more particularly, upon the large Silver Coin of the Dollar and Rupee class—the Dollar more especially, which is now represented in Europe by the 5 Francs piece, the Spanish Dollar, the Thaler, the Rouble, the 2½ Guilders piece, and in the Western Hemisphere by the South American and Mexican Dollar, would soon have to disappear altogether, as they would be entirely unsuitable even for the restricted use to which this new law would limit them. The smaller Coin of the Threepence, Sixpence, Shilling, and Florin class, might continue to pass at their present over-valued rate, as they do in England, although the disturbance would no doubt soon affect their current value also.

A vast amount of Silver is held in deposit in the shape of Bullion, and the Paper Currency of many States (in Germany more especially) is founded on this Bullion deposited in the State Banks. The Silver Bullion lies dormant in the Bank vaults, but the Paper Currency which is based upon it, and represents it, effectually performs in its stead the function of Circulating Medium naturally assigned to it. Even the great objection of *Bulkiness* cannot be brought against *Silver Money* so represented. But a fall in the price of Silver would weaken or destroy the foundation of value upon which the Paper Currency rests.

Can any one doubt but that if 480 millions in Silver

out of 550 millions are thrown on the Markets of the World as metal, the value of the material will decline considerably? Can it be doubted but that the continual steady influx of fresh supplies of Silver will aggravate this unfavourable contingency?

The probable extent of the decline in price cannot now be fixed; but, upon the usual rules of supply and demand, it is not unlikely that, taking the proportions as we have assumed them here, Silver will fall to $\frac{1}{3}$ rd or $\frac{1}{4}$ th of its present value.

Regarded in a mere superficial point of view, this contingency may seem to present no very formidable aspect; but there is involved in the question a consideration of much higher importance, directly connected with the welfare of mankind.

We have estimated the whole mass of the Circulating Medium at present existing in the World at one thousand two hundred and fifty millions Sterling in Coin and Bullion. Seven hundred millions of this sum are in Gold, five hundred and fifty millions in Silver. The universal introduction of the single Gold Standard would demonetise the far greater portion of the Silver Money; it would, as we have seen already, reduce the 550 millions* in the course of time to 70

* To guard against misconception, as we use the term *Silver Money*, we repeat that the greater portion of this amount is represented by Silver Bullion, either held by Banks, or hoarded in India and elsewhere; but this Bullion can be converted into current Coin, and it is upon this convertibility into Currency that its accepted or conventional value depends. With the demonetisation of Silver, therefore, the basis is taken away upon which this value rests.

millions, which latter sum would be amply sufficient to provide for all payments in small amounts, for which alone Silver would remain legal tender. We are justified, then, in assuming that the solid Circulating Medium now existing in the World would suffer a somewhat sudden reduction of some THIRTY-EIGHT AND A-HALF PER CENT.! for which we could not possibly expect to find an immediate compensation in the increased supply of Gold Money, or in a considerable rise in the value of Gold. Will any one pretend to deny but that the withdrawal of so large a portion of the World's solid Circulating Medium must seriously injure the best and truest interests of Trade and Commerce, and disastrously affect the social welfare of mankind?

Suppose even, for the sake of argument, that either by a continued large increase in the supply of Gold, or by a considerable rise in the value of that Metal, or by both causes combined, the enormous deficiency created in the actual stock of the Hard Circulating Medium of the World were to be absolutely filled up in time to avoid the injurious effects here foreseen by us, what difference would this make to the holders of Silver so seriously depreciated in value, not by the natural operation of supply and demand, but simply by the force of a most arbitrary law? What compensation would it afford them? And let us not forget that we, through our Indian Empire, are ourselves the largest holders of Silver, and that this loss would accordingly fall heaviest upon our own shoulders.

Whatever difference of opinion may otherwise exist among Political Economists about the effects of the

late Gold discoveries, upon this one point all authorities on the subject are agreed, to wit, that the large increase in the supply of Gold has given a universal impulse to Trade, Commerce, and Industry, and to general Social Development and Progress, and that it has considerably enhanced the Material Welfare and Comfort of Mankind. The mere possession of greater riches in the Precious Metals is in itself a direct gain and advance in General Wealth, even in the most abstract acceptation of the term; the material, palpable signs of this advance in Wealth are seen and felt in the stimulus and encouragement which a large increase in the universal Capital must necessarily give to Industry and Commerce and Labour, and the increased production of all kinds of commodities, either in consequence or in anticipation of an increased demand for them.

An increase in the Circulating Medium is beneficial even where that Medium is represented by Paper, such as Bank Notes, State Notes, Bills of Exchange, &c. Experience has shown that the issue of fresh Notes, in Paper-issuing States, has a tendency to give an immediate impulse to commerce, in spite of the depreciation to which a Paper Currency is naturally liable. The example of the United States, with their Greenback Currency, is conclusive on this point. With the evils connected with such Paper Issues, and the difficulty to provide for their redemption, we have no concern here : we simply wish to point out that the direct beneficial effect which an increase even in this indifferent sort of money is calculated to have on industry and commerce

cannot be denied. How much greater then must the benefit be that may be expected to result from an increase in the solid Circulating Medium !

The converse surely must hold equally good, therefore, viz. that the destruction of a considerable portion of the existing Circulating Medium, the annihilation of part of the World's capital, cannot but prove injurious to the best and truest interests of mankind ; and we are clearly justified in maintaining that the advocates of the Single Gold Standard, by the projected universal prohibitions of payments in Silver, except to an insignificant amount, would strike a most serious blow against the advance of civilisation and the blessings of social progress.

The argument has been used that Gold will replace Silver, because so much more Gold is yet expected to be found. Well, let us welcome these fresh supplies of Gold, but their arrival is surely no reason why we should do away with Silver.

It is also argued that Gold will rise in value, and that this will afford compensation for the demonetisation of Silver. We deny this ; Gold may, indeed, rise in value, but certainly not to the extent required to compensate the World for the withdrawal of nigh upon 500 millions Sterling in Silver.

If Money is beneficial to the World, and if both Gold and Silver are fit materials to represent it, let us keep to both Gold and Silver.

The forcible debasement of Silver by an arbitrary law cannot find compensation in a greater increase of Gold ; but admitting even it might, why should we

not profit by this increase of Gold without being compelled to submit to the proposed debasement of Silver?

We do not now touch upon the point of the relative value between Gold and Silver. It does not matter so far whether, from the variations in supply, it may be found expedient to fix the proportionate value of one part of Gold to 10, or $14\frac{1}{2}$, or $15\frac{1}{2}$, or 20 parts of Silver. This is a subject for future consideration; but we have here placed before the reader the effect which the introduction of the Gold Valuation, with its restrictions on Silver, is likely to have upon the future value of that material. These views are the outposts from which the subject, in the first instance, may be watched and examined.

3. *The general state and aspect of the Question, and the grounds upon which the advocates of the Single Gold Valuation recommend its introduction, and the fallacy of which we, defending the Double Valuation, propose to demonstrate.*

We have stated that, taking into due account the various Coinages of the World, it is found that, as an almost universal rule, one part of Gold is held to be of the same value as about $15\frac{1}{2}$ parts of Silver. With respect to the relative value of Gold and Silver in ancient times, we have no positive data to go upon. It is, however, generally assumed, that a Talent of Gold was held worth—in Asia, Africa, and Europe—ten Talents of Silver; and we know that this remained the proportionate value in Europe up to some three hundred years ago, when the discovery of the Ame-

rican Mines, and the large importations of Silver from the New World,* tended to alter this proportion gradually, until it finally came to stand, as a general rule, at between fifteen and sixteen parts of Silver to one part of Gold; ranging between these two points according to the different countries and localities. The exact period at which the relative ratio of one to fifteen or sixteen was reached cannot be determined now; but we know for a fact that it stood at these figures at the commencement of the present century—that is to say, in Europe; for in most parts of Asia it kept, up to a comparatively recent period, ranging between ten to twelve of Silver to one of Gold. In Japan the relative value of Gold as compared to Silver stood even as low as one to four, until the opening of the Japanese ports to European commerce opened the eyes of the Japanese to the much higher estimation in which the rest of the World held Gold, and led them to the adoption of the same relative Standard—a result entirely owing, in this instance, as is thus clearly seen, to the widened and improved international intercourse between the Japanese and other nations.

At the beginning of this century the means of international intercourse were rather limited, even in Europe; which permitted slight variations in the value

* It was but natural that the enormous masses of Silver brought over from the New World by the Spaniards, should affect the price of the article. It is affirmed that the *purchasing power* of Silver, which simply means its relation of value to other commodities, fell some 83 per cent.; however, Gold also fell at the same time about 75 per cent. in value.

of Gold Coin as against Silver Coin. Still international intercourse was even then sufficiently developed in Europe to fix the limit of these variations between the points given, viz. one of Gold to from fifteen to sixteen of Silver. Whether this result was arrived at by the general consent of the European nations, and whether it was brought about simply by the natural action of the law of supply and demand, or whether legislative interference had to be resorted to to achieve it, is a matter of no moment for the consideration of the subject here. We think we may point to the instance of Japan, as mentioned above, in support of our view that the extension of international intercourse, and the improved means of communication between the nations of Europe, have powerfully contributed to fix the actual proportionate value of Gold and Silver at the present ratio of one part of the former to between fifteen and sixteen parts of the latter.

We find also that up to the beginning of the present century Silver was preferred to Gold as a Standard of Value, no doubt on account of its preponderating quantity. However, the question as to which of the two Metals ought to be selected as the positive Standard did not attract much attention then. To judge from the ancient Mintage regulations of all nations, Silver was clearly considered by the Governments the more important of the two precious Metals in their capacity of Coins. The public at large were, of course, as well content with Gold as with Silver, so long as the Coins of both Metals were found to effectually perform the functions of Currency; for the

ordinary citizen is but little given, as a rule, to go deeply into the political and social considerations connected with the subject : he is generally content to place faith in the Coin of the Realm.

It was in England that the question of a single positive Standard of Value was first practically introduced in 1816. *Practically*, we say, because at that period the theoretical grounds upon which the advocates of the system of the Single Standard now take their stand had not yet been excogitated.

Up to 1816 Silver had been the true Standard of Value in England ; at that time the relation which the British Silver Coin bore to the Gold Coin was as $15\frac{1}{4}$ to 1.

In France, on the other hand, Silver was slightly over-valued as compared with Gold. This circumstance, coupled with the rapid extension of the British Empire, and with the great War in which Great Britain was then engaged, led to an extensive exportation of Silver Coin, which naturally created considerable inconvenience, and entailed a heavy expenditure on the Mint. The Country was at that period deluged with Paper Money. It was then in contemplation to reorganise the System of the British Currency. The first step which the Government resolved upon was to devise efficient measures to put a stop to the exportation of Silver ; this object was most effectively achieved, by raising the value of the Silver Coin as compared with Gold, the proportion being fixed at $14\frac{1}{2}$ to 1, whilst the rest of the World kept it, as they do to the present day, at $15\frac{1}{2}$ or 16 to 1.

With the adoption of this measure, it was quite

natural that Gold should from that time forward take the place of Silver as the only practicable Standard of value in England. The advocates of the Single Gold Valuation point with pride to Great Britain, the principal country where the Single Gold Standard prevails, as a most favourable instance of success in illustration of the soundness of their views. We shall hereafter take occasion to express our opinion on this point.

This was the first movement in favour of the Single Gold Valuation. It was, as we have just shown, entirely practical, being based on no theory, for the very simple reason that no theory on the subject existed at the time.

But some eight or nine years after the opening of the Gold Fields in California and Australia, in 1858, Michel Chevalier gave the World his theoretical views on the question. He took his stand upon the *assumed* fact that the sudden, enormous increase in the quantity of Gold had lowered the value of that Precious Metal, and had depreciated it in the World's market, and disturbed its accepted relation to all other commodities, &c.

The great Political Economist of France has drawn around him a certain school of Theorists, who succeeded in carrying the day in favour of their views at the Monetary Conference held in Paris in the year 1867, which constituted the third movement in support of the Single Gold Valuation. At this Conference it was decided, as has been stated in a preceding Chapter, that it was expedient to adopt the Single Gold Standard for all the Monetary Systems of the World.

Our object here will be to endeavour to demonstrate the insufficiency and inconclusiveness of the results of these three movements, to establish the Single Gold Valuation all over the World; and we propose to show—

A. That, admitting even that England affords a fairly successful instance of the wisdom of establishing the Single Gold Standard, the position of that country is quite exceptional, and the success of the experiment there is to be attributed solely to the exceptional character of that position.

B. That Michel Chevalier and his School are not right in many of their asserted facts, nor in their deductions and inferences, and in the propositions advanced by them.

C. That the Paris Monetary Conference of 1867 should not be regarded in the light of a supreme authority whose decision in the matter ought to be considered conclusive and final.

A. *The example of England.* In England the proportionate value of Gold and Silver Coin, as fixed by the Mint law, is as 1 to $14\frac{1}{2}$, whereas in most other countries it is as 1 to $15\frac{1}{2}$; the value of Silver Coin in England is thus artificially raised by about $6\frac{2}{3}$ per cent. The Mint issues Silver Coin at 66d per oz. Standard, whilst Bar Silver sells in the open Market at $60\frac{1}{4}$ d to $62\frac{1}{2}$ d per oz. Standard. The artificial excess of value thus given to Silver Coin in England is upheld simply by the operation of the law of

legal tender. Now, how far does the power of this law of legal tender extend? We find, as the case stands at present, that it supplies $6\frac{2}{3}$ per cent. of the nominal value of the British Silver Coinage, making $93\frac{1}{3}$ parts of Silver pass for 100 parts full. Could not this law be made to go further in its value-creating and supplementing action? Might it not supply 25 or 50, or even 75 or 95 per cent, of the nominal value of the Coinage, leaving only some 75, 50, 25 or even 5 per cent. of actual Metallic value in the pieces of our Currency? Have we not indeed, in our Copper Coinage, proof positive that the operation of the law of legal tender is sufficiently powerful, at least, to supply 75 per cent. of the nominal value of the pieces, leaving only 25 per cent. intrinsic Metallic value? Nay, why should we not dispense altogether with the Silver Coinage, and substitute a non-metallic Currency instead, as is actually done in certain countries where they have a forced Paper Currency. A moment's reflection will show that any attempt of the kind must necessarily fail with us. Currency, in the sense and acceptation in which we in this country understand the term, must always be based upon intrinsic metallic value. The low metallic value of our Copper Coinage is not a case in point; for we must not overlook this most important qualification, that the same law which confers such excessive artificial value upon our Bronze Coin restricts the legal use of the over-valued pieces within exceedingly narrow limits; also that Copper or Bronze constitutes only a most insignificant portion of our Metallic Currency. With Silver the

matter is very different, and though the British Public is content to take $93\frac{2}{3}$ per cent. of Silver for one hundred full, it would certainly not quietly put up with a further stretch of the operation of the law of legal tender in the direction of an additional debasement of the Silver Coinage. The excess of $6\frac{2}{3}$ per cent. now supplied by the law of legal tender is the difference between the Mintage price of 66d per ounce of Silver Coin issued and the universal average price of $60\frac{7}{8}$ d per oz. of Silver bought and sold in the Market. It is this universal Market price of Silver which supplies the foundation for the Mintage Rate of Silver. Suppose this foundation were suddenly to alter to a very considerable extent; suppose Silver were to fall in the Market to 50d or 40d per oz. Standard—is it likely, we ask, that the public would continue to take the Silver Coin at its present nominal value? We should rather think, it is *not* likely. The present average market price of $60\frac{7}{8}$ d per oz. is kept up simply by the value which Continental Nations, and China, and India, and the East generally place on Silver. England having, so to say, *demonetised* Silver to a most considerable extent at least, has no use or employment for the very large surplus of the Metal which is not consumed in manufactures or in the arts; the price of the article in the Market is kept up, then, solely by the demand from abroad. If this demand from abroad were suddenly to decrease considerably, or to fail altogether, the price of Bar Silver in the English Market would go down at once to an extent which would reduce the actual

value of the Silver Coinage out of all proportion below the nominal value assigned to it by the law of legal tender.

It is simply upon the basis of the actual universal market price of Silver that the margin of $6\frac{1}{2}$ per cent. is allowable, which the law of legal tender creates in excess over the intrinsic value of our Silver Coin. Take this basis away, and the entire system erected upon it must collapse. If all other nations were to follow the example of England, the result might be that this basis would indeed be taken away. Let the price of Silver experience a serious fall—as it is by no means unlikely may be the consequence of the restricted use of the Metal in future—and the nominal value of all the Silver Coinages now existing would at once grow out of all sound proportion to the intrinsic Metallic value of the pieces, and a gap would be produced which the force of law would prove unavailing to fill up.

On the other hand, let Silver experience a considerable rise—which, however, is not a thing very likely to happen—the inconvenience would be equally great in an opposite direction. But if the actual average market price of Silver, say $60\frac{1}{8}$ d per oz. Standard, keeps unaltered, the maintenance of the present settled relation of the value of Silver as compared with that of Gold will in itself afford the best argument and the strongest plea in favor of the maintenance of the Double Standard of Valuation.

Let us see what Michel Chevalier has to say upon the alteration of the Standard in England in 1816:—

"England," he says, "may be regarded as having effected in 1816 the delicate operation of the alteration of the Standard. She then substituted the Standard of Gold, frankly avowed, for the Standard of Silver which had been expressly chosen in ancient times, but of which the titles had become somewhat obscured in people's minds, without, however, being quite forgotten. At that time, the men who exercised the greatest influence on the Government and on public opinion allowed themselves to be unduly influenced by the advantage which Gold possesses of being more portable than Silver. They thought, also, that Gold fulfilled better, or at least less imperfectly than Silver, the important condition of fixedness of value. In that they probably deceived themselves; and if at the present time the most competent judges in such matters in England were consulted, a great number would pronounce themselves in an opposite sense. But it is essential to add that in 1816 there was nothing which warranted the expectation that the relation of Gold and Silver would be modified. It was still less probable that, if a change did occur, it would consist in a fall in the value of Gold. The fact is, that the relation between the two metals underwent in the succeeding years a very slight modification, which was maintained until 1848 or 1849, but it was in the direction of a rise of Gold relatively to Silver, and not of its depreciation."

This is an acknowledgment that England was not influenced in her action then by the modern theories upon the subject on which the question has been lately agitated. The author might have added, that the chief motive which prompted the British Government at the time to alter the Standard from Silver to Gold, was purely a selfish and sordid one: it was, as we have already had occasion to remark, simply the desire to save the heavy cost of the Silver Coinage. It may be taken for granted that the men who proposed and carried out the alteration of the Standard had no thought at the time of the wide bearing of their act. In our opinion, so far from the boasted *success* of the

measure being a fit subject for congratulation, and a powerful argument in support of its universal adoption, it is a moot point even whether the policy that dictated it has not injuriously affected England's interest all over the World. Suppose the nation had to expend £100,000 per annum in Mintage charges, would not this expenditure have found itself more than amply repaid in the influence which an abundance of Silver Coin, struck in Great Britain, and impressed with the emblems of her royalty and power, and exported chiefly to the English Colonies, and to India, China, &c., must naturally exercise among the nations trading with England, more especially in the East? As the case stands at present, the Monetary System of England and that of her Empire of India are diametrically opposed to each other, to the great injury of England's influence, and of Indian commerce generally.

Again, is the English Silver Coinage a thoroughly healthy one in principle? The most ardent advocate of the mode in which it is valued cannot deny that, to a certain extent, it has the character of a forced Currency, and a forced Currency, whether in Metal or in Paper, is unsound in theory.

We do not think, then, that England, in spite of the fact that practically her system of Gold Valuation has maintained itself, is an example which the World at large ought to follow. It is said that the system has done well for England, forsooth, but this does not prove that a Double Valuation would not have done still better.

Before we dismiss this branch of the subject, we have to allude briefly to the effect which the exceptional position of England's Silver Coinage has had upon the Silver Coinage of other countries, and more particularly upon that of France. For the last twenty years the French 5 Francs pieces have been fast disappearing, in consequence of large exportations of the article to India and China for English account. Whenever the price of Bar Silver in England rises above a certain limit, it becomes profitable to ship five Francs pieces from Marseilles to India. This exportation of her Silver Coin has been a grievous evil for France; the great inconvenience resulting from it has furnished certain French Financiers with arguments against the use of Silver for Coin. It must be clear, however, to any unbiassed mind, that the fault here is not imputable to any defect inherent in the French system of Double Valuation, but ought to be put down entirely to the account of one of the indirect effects of England's exceptional position in the matter of her Silver Coinage.

B. *Michel Chevalier's work* (an English version of which, by Cobden, was published in 1859) was written at a time when we had been receiving for about ten years most considerable additions to our stock of Gold, and when there was every prospect that these additions would still go on increasing in future. In this book Michel Chevalier does not pronounce a decided opinion in favor of the Single Gold Standard; nay, at the conclusion, he almost seems to speak in defence of the Double Standard, and is, at all events, content to

leave the decision of the question to the future. Still there is clearly perceptible throughout the book a strong leaning towards the British Gold Valuation. He seems to take England for an example, and evidently shows that he is greatly influenced by his admiration of her. But, with the exception that he seems to espouse a few dogmas established by English Financiers, which he quotes, the position which he takes up is, upon the whole, pretty impartial; and, as we have just now stated, he is content after all to leave the settlement of the question to time.

His statements and views, which have certainly largely influenced the decision of the majority at the late Paris Monetary Conference, have been fully adopted and endorsed by some, and equally strongly combated and controverted by others. It is admitted that some of the refutations of his views, published in pamphlets and books, have been fairly successful. We cannot here follow Michel Chevalier, from point to point, through the pages of his book, but must rest satisfied with extracting and combating two chief conclusions at which he arrives in his work.

The *first* of these conclusions is, that in consequence of the large and increasing supply of the Metal from California, Australia, the Ural, &c., Gold must fall in value. Now, in the first place, this *fall in the value of Gold* thus proclaimed, cannot properly be called a *fall* in the price of Gold, as it is not to be expressed by a reduction of so many Shillings and Pence in the value of the Gold Pound Sterling, but simply by the rise in the price of other commodities.

At the first glance this may look very much like a distinction without a difference ; but, properly considered, it is really not so. The fact is, the *measure of value* cannot possibly alter, though the commodity estimated by it may vary and fluctuate in price. If a certain article were to rise in price, a second article remaining stationary meanwhile, and Gold, as a third article, were to fall in price, then, by the Standard supplied by the second stationary article, it might be logical to affirm that the first article had risen in price, whilst Gold had fallen in value. But as Gold is itself the Standard of Value, there can only be a rise or fall in the price of the other articles that are measured by this Standard, and it would be quite illogical to assert that Gold had fallen in value. Still, in its practical results, the matter comes pretty much to the same thing ; for whenever commodities grow dearer, the purchasing power of Gold is lessened in the same ratio. Chevalier's assertion that *Gold must fall in value* naturally created a great deal of sensation. M. Chevalier himself was so much impressed with the gravity of the event which he believed he foresaw, that we find him actually speculating upon the possible *demonetisation* of Gold. The anticipation of this extreme result is based upon the theoretical assumption that, in proportion as Gold increases in quantity, so will the price of other commodities rise.

If, on the one hand, the production of Gold should really go on indefinitely at the same high annual rate as since 1848 and 1849, and if, on the other hand, it could be clearly established that the natural operation

of the law of supply and demand applies as strictly and absolutely to the case of Gold as to that of any other commodity, it might indeed be very possible that there would be a considerable decrease in the purchasing power of Gold. Still, even admitting 50, or 75, nay 95 per cent. of this purchasing power to be gone, even this immense depreciation of the article would certainly be no conclusively valid reason for Gold to be discarded altogether from use for monetary purposes.

But we are prepared to show that the assumptions of Chevalier are erroneous, both with regard to the anticipated progressive increase of the annual yield of Gold, and with regard to the corresponding progressive rise in the price of all other commodities. It is very true that the total quantity of Gold has doubled within the last twenty years, and it is possible, no doubt, that the supply may keep on at the same rate for the next twenty years to come. But, surely, no one believes seriously that the Californian and Australian Gold fields are inexhaustible? They have added, say some 500 millions sterling to our stock; let them supply us with another 500 millions, and, after that, we may safely take it for granted that their productiveness will drop down to the ordinary level, and that the annual increase will be counterbalanced by the increased annual absorption of Gold for manufacturing purposes, &c.

M. Chevalier's supposition respecting the rise in the price of all commodities, and the *so-called* corresponding fall in the value of Gold is evidently based upon the notion that the quantity of Gold, which

is the great purchasing Medium, having doubled, the price of the goods to be purchased with this Medium must also have doubled, or must at least have considerably risen, making due allowance for the fact that the increase has not extended to the Silver branch of the circulating Medium. At the first glance this might seem a logical conclusion, if the question were simply one of a fixed arithmetical proportion between the quantity of the purchasing Medium on the one, and the price of the purchasable commodities on the other side, as Michel Chevalier and his school would seem to take it to be. But is it so? Are there not a great many factors at work in the matter, which require to be taken into due consideration? So far from being ruled by the greater or lesser amount of the solid Medium of Exchange in actual circulation, the rise or fall in the price of commodities depends upon a variety of circumstances and contingencies, and, if we want to find the rule which governs the matter, it will not do to start upon the basis of some assumed favourite mathematical axiom, or to be guided by isolated facts, or pass a limited review over a short period of time, or confine our observation to this or that country.

If there were in reality a fixed arithmetical proportion between the quantity of purchasing Medium and the price of the purchasable commodities; why, in that case, the price of commodities ought to be, now in 1868, some 40 per cent. higher than it was in 1847 and 1848; for the quantity of Gold Coin has increased 100 per cent. since then, and the quantity of Gold and Silver Coin taken jointly has increased at least 40 per cent.

Let us see how the matter stands actually. Mr. Nicholson says, upon this point in 1865 :—

“The best authorities still dispute whether this general rise of prices has yet taken place. We find Professor Cairnes stating, in the *Times*, that ‘a man with a fixed money income obtains now 20 per cent. less of commodities in general than he would have obtained had the Gold discoveries never taken place.’ On the other hand, Mr. T. Crawford states in the same paper that ‘there certainly has been no rise in price in the commodities of which the supply has been equal to the demand.* There has been no rise in the price of Iron, Copper, Tin, Lead, Zinc; or in Rice, Sugar, Tea, Coffee, Wool, Spices, or Dye Stuffs. In many commodities there has been a fall of price, the result of more economic processes of production.’”

This appears in Mr. Nicholson’s work, which was published in 1865. Now, what has our experience been since then? Why, we have passed through a most severe financial and commercial Crisis, and goods have suffered a great fall. Many Commodities are actually much cheaper than they were in 1847 and 1848, before the discovery of the Gold Fields. Some years back Cotton rose disproportionately in price; but it was the Civil War in the United States which caused the rise, not the increased quantity of Gold Coin in the World; and Cotton is cheaper now than it was ever before. Everybody is aware that the price of Corn, Flour, and Bread depends much more upon the state of the crops and the yield of the harvests all over the Continent of Europe, and in the North American States, than upon an increase

* The fact that the supply of such commodities has kept up to the demand seems to us to afford ample proof that the World at large has grown wealthier in those commodities as well as in Gold.

or reduction of the Circulating Medium. Increased facilities of intercourse with other Nations, speedier and cheaper modes of conveyance, more perfect and more economical processes of produce, and the growing tendency to widen the sphere over which the blessings of Free Trade extend, may safely be expected to keep down the prices of commodities, the large influx of Gold from California, Australia, and the Ural notwithstanding.

Had Chevalier waited till now, he certainly would not have arrived at the conclusion that a large increase in the circulating solid Medium of Exchange must necessarily lead to a corresponding rise in the price of other commodities; the stubborn fact that prices are actually lower now than they were before the discovery of the Gold Fields has thoroughly overthrown his theories established upon the incomplete, unsatisfactory, and inconclusive basis of the results of a limited review over a comparatively brief period of time, and confined chiefly to France. Admitting a certain increase in the prices of commodities did take place after the discovery of the Gold Fields, are we not, in view of the subsequent collapse of prices and the universal depression of trade after 1866, justified in attributing this rise in a great measure, at least, to the *inflation* of Commerce and Trade produced by a sudden large addition of Money? It was this inflation that led to the late Crisis, which has forced back things into a more natural and more healthy state.

The *second* important conclusion arrived at by

Michel Chevalier is that the large additional supply of Gold has led to a serious disturbance in the relative proportion of value between Gold and Silver.

In no instance has the extreme dogmatic application of the axiomatically assumed rigorous operation of the law of supply and demand met with a more complete practical refutation than in the question here more immediately before us—viz., the proportionate value of the price of the Precious Metals. The case may be stated very simply. Gold has increased something like 100 per cent. during the last twenty years, whilst Silver has, during the same period, increased only some ten per cent. Silver ought, therefore, to have risen considerably in price as compared with Gold.

Nothing of the kind has, however, taken place. Silver keeps still at the same price it was twenty years ago, and this notwithstanding that several hundred millions sterling worth of it have been exported from Europe to Asia—a fact certainly calculated, one would think, to accelerate the rise in the price of the article. Yet we see that both these powerful levers combined have failed in effecting the rise in the price of Silver so confidently expected by Michel Chevalier. Some allowance has to be made, of course, for the circumstance that France, for instance, has of late used less Silver for Coinage than she was formerly in the habit of doing; still, even if she had continued to use the same amount of Silver for Coinage as formerly, this would have exercised no influence on the exportation of Silver to India.

There is a vague impression that Silver is now

dearer by about 3 or 4 per cent. This is founded upon the fact that before 1848 its price in London fell occasionally as low as 59d per oz. It must not be forgotten, however, that even at that time the means of international communication by steam and telegraph were not so perfect as they are now, that commerce did not move with the same rapidity, and that charges and profits were larger than they are now. On the Continent Silver has varied but little in price, and the present generally higher value of Silver Bars in England is due to the above causes, and to the development of the Indian, Chinese and Japan trade, and not to the supposed disproportionately large supply of Gold.

M. Chevalier devotes an entire chapter of his book to the subject of the probable rise in the price of Silver. When he published his work, in 1859, India was absorbing large sums of Silver from Europe, which, it must be admitted, created some alarm at the time, and there can be no doubt but that this made a strong impression upon him. For a couple of years India has ceased to take Silver from us. She now (April 1868) recommences taking Bullion from us; but, as Gold is gradually gaining ground in Asia, it is by no means unlikely that in future a large portion of this Bullion may be Gold instead of Silver.

There is another circumstance for which M. Chevalier was not prepared when he wrote his book; viz., the discovery of fresh rich Silver Mines. California and the parts adjacent have since 1860, in addition to their abundant Gold crops, produced nearly five millions

sterling Silver per annum. Why should not other Silver Mines be discovered, whose yield might contribute, in the course of years, to restore the balance between the supply of Gold and Silver? It ought to be well borne in mind also that the exceptionably large supply of Gold in the last twenty years has certainly something of a spasmodic character about it, whereas the yield of the Silver Mines has kept on steadily at the same rate for a long series of years; so that it is not at all improbable but that, whilst the new Silver Mines and the old will go on steadily producing their present yield of metallic treasure, the produce of the Gold Mines will subside to a much lower level, which again must necessarily tend to restore the balance between the two Metals.

There is a very plausible argument made use of by Michel Chevalier and his adherents, which seems to bear strongly against the Double Valuation. It is this:—"The value of each of the Precious Metals is liable to perpetual changes. The Mint authorities may do their best to fix the relative value of the two Metals in the closest possible correspondence with the proportion which they actually bear to each other in the Market, the chances are that the fluctuations in the Market price will speedily alter the proportion fixed by the Mint regulations, and that the one of the two Metals will become over-valued accordingly, as Coin in comparison with the other. And in this case the debtor is always sure to pay his creditor in the over-valued Metal, which he naturally finds the

cheapest for him. Surely it cannot be just to force the creditor to submit to this option on the debtor's part."

This means if Gold falls in price in the Market, whilst Silver remains stationary or rises in price, Gold Coin is over-valued, and debtors will accordingly pay in Gold, and *vice versa* with Silver. We might argue against this plea, that if the option lies with the debtor in which Coin he chooses to pay, the same option lies also with the creditor in his capacity as debtor to others; so, as he is at liberty to make his own payments in the same Coin in which he himself has been paid, there is no injustice done him. However, setting this aside, the question here again turns upon the point whether the disproportion in the supply and demand of the two Metals is likely to be so considerable as to warrant the assumption that the debtor will derive a clear and positive advantage by paying in the over-valued Metal.

We propose to examine and discuss this point when, at the end of this Chapter, we develop our own plan for the maintenance of the Double Standard.

Michel Chevalier concludes his work by proposing to leave the settlement of the question of the Single or Double Standard of Valuation to time. It seems to us that the time to pronounce a decision on the point had come in 1867, when the Monetary Conference or Convention met at Paris.

3. *The Paris Conference*.—We have in the Chapter preceding this given an account of the proceedings of the two Conferences—the one held chiefly by Dele-

gates from Scientific Societies with a special view to the promotion of a uniform system of weights, measures, and coins; the other a Diplomatic Conference, convened especially to discuss the important subject of International Coinage)—upon the authority of a Report read on the 27th of November last, before the Society of Arts, by Professor Leone Levi, one of the British scientific Delegates at the Conference.

We will here, for greater clearness' sake, repeat the seventh resolution proposed at the Scientific Conference respecting the Double Standard, and the discussion which took place upon this resolution.

The said seventh resolution proposed was this—

"It is extremely desirable that the system of Double Standards be abandoned, wherever it yet exists."

"M. Wolowski," proceeds Professor Levi's Report, "so able and so eloquent, fought hard in favour of the Double Standard. He argued in favour of leaving it optional with debtors to pay in Gold or Silver, and thought it inexpedient to fix on the Gold Standard for all nations, having regard to the changes which have occurred and may still occur in the production of Gold and Silver. M. Wolowski was, of course, answered that the system of a Double Standard was unjust in itself, since it left the creditor at the mercy of the debtor, in allowing him to pay in the least valuable metal; that if it was desirable that the Standard of Exchange should be as little as possible subject to oscillation of value, it was certainly inexpedient to subject it to the oscillations affecting both Gold and Silver; whilst the adoption of a Double Standard would render any agreement with England and America impossible. Thus the discussion ended, and the resolutions proposed passed almost unanimously, with some verbal alterations."

It is quite evident, from this Report, that the rejection of the Double and the adoption of the Single

Standard was a foregone conclusion with the majority of the Delegates.

Then there was the Diplomatic Conference, which was attended by official Delegates, nominated by the different Governments. The subject of the Single or Double Standard was equally discussed by these gentlemen, and there was considerable diversity of opinion about it among them. We do not intend here to follow the discussion, but we cannot abstain from mentioning, by way of giving a sample of the spirit in which certain of the Delegates approached the subject, and the sort of knowledge they brought to bear upon it, that one of these gentlemen coolly asserted "that all civilised nations had already practically adopted the Single Gold Standard." We always thought that Prussia and Holland, among others, might fairly advance some claim to be ranked among civilised countries; yet *they* have not adopted the Single Gold Valuation, and it is even unquestionably the fact that Gold is actually in little request there, and that the far greater part of the Coinage consists of Silver. The Silver Valuation prevails in these countries, and the State Banks of Prussia, Holland, and Hamburg hold almost all their Bullion in Silver Bars.

Again, another of the speakers gave it as his opinion that "in the countries where the Gold Valuation prevailed the rise and fall of prices was less marked than elsewhere." If England, the principal seat of the Gold Standard, be taken as an example here, the proposition is decidedly founded in error,

for nowhere has the fluctuation in prices been so considerable as in England.

The discussion altogether did not bring out a single clear, conclusive and unassailable argument in support of the universal adoption of the Single Gold Standard; this will be admitted even by the warmest advocates of the proposed measure. Considering the momentous magnitude of the proposition, which means nothing short of a sweeping revolution in the Monetary system of the world, it might certainly have been expected that the matter would have been approached on all sides in a spirit of diffidence, and with a sincere and earnest desire to consider and discuss the subject in all its bearings, and to clear up the last vestige of doubt about it, before pronouncing a decisive opinion either way. When, instead of this, we find the subject of the discussion treated by most of the speakers as a foregone conclusion, and finally decided upon the ground of bare bold assertions, unsupported by facts or arguments, we may surely claim the right to refuse servilely subscribing to the decision. We cannot help thinking that the *genius loci*, the atmosphere of the place where the Conference was held, must have exercised a certain influence upon the minds and views of many of the Delegates; we are not quite certain whether the English scientific Delegates were not among the number thus led to make undue obeisance to the French system, and everything French connected with it. We are quite willing to admit that the French Monetary system is excellent in its way, and that the metrical system of weights and measures seems

certainly the best that could be hit upon. But surely this is not sufficient reason why all the World should submissively follow in the same path, without further examination into the matter, and without consideration of the crowd of circumstances of place and condition which everywhere surround the subject. At all events it was no reason that the views of French financiers, based mostly on experience confined to France, and the opinions of the American Delegate, and a few other disciples of the same school, should have been so emphatically adopted as they were by the majority of the Delegates at the Conference.

As we have shown, the oscillations in the proportionate value of Gold and Silver have now for many years past kept within very manageable limits, and it would, in our opinion, be much better and wiser, instead of proposing to use the force of law, as the advocates of the Single Gold Standard do, to destroy the existing relative proportion of value between the two Metals, to employ that same force for the maintenance of their proportionate value, so long, at least, as no notable natural rise or decline in the price of either of the two Metals shall come to afford a practical demonstration of the necessity of a change. This certainly has not occurred as yet, as even the warmest advocates of the Single Gold Standard are forced to admit, and the uncertain and flickering indications which have occasionally seemed to point in this direction have invariably soon died away again.

We would like to place the decision and issue of

the question upon this consideration: "Is not the forcible disturbance of the existing Monetary systems of the World calculated to create infinitely more mischief than all the promised and anticipated advantages of the universal adoption of the Single Gold Standard are likely to cure or counterbalance?"

Let us inquire what are the measures that will have to be taken to effect the universal introduction of the Single Gold Standard, and what would be the effect of these measures upon the general value of the existing circulating mediums? If Gold is to be legally declared to be regarded henceforth as the only Standard of Value, it is clear that the law must explicitly invest the Metal with this office. It will accordingly, as we have said before, be indispensable to adopt everywhere the law of legal tender as it exists in England. Indeed, in France and the other States of the French Monetary Union, this has already been done with regard to all Silver Coin below the Five Francs piece, which latter is, however, still maintained as the sole remaining representative of the partial Silver valuation.

It has been generally held hitherto that the value of Gold and Silver is naturally inherent in these Metals, and that the relative proportion of value in which they stand to each other is simply the result of the natural operation of the laws of supply and demand. The Mint regulations have always endeavoured to fix the relative value of the two Metals in the closest practicable correspondence with their prices in the market. But certainly at no time and nowhere (except in

England, which, as we have repeatedly explained, occupies an altogether exceptional position in relation to this question) has the law ever been had recourse to to suppress the use of one of the two Coinage Metals, and establish the sole supremacy of the other.

This coercive and prohibitory feature in the proposed measure is the more calculated to strike us with amazement, as the proposer and the supporters of it start in their argument from the broadest basis of free trade, and the most unrestricted operation of the laws of supply and demand. In these enlightened days people are apt to be captivated by arguments that profess to be based upon a liberal application of the principles of free trade, and upon the natural laws; and when they find men of eminence arriving at conclusions that, from a common sense point of view, may seem to be the very negation of the principles upon which they profess to be based, they are apt also to believe that these eminent men are guided in their reasoning, and in the conclusions and results at which they arrive, by a sense superior to the common; and they will occasionally take the soundness of a system on trust, upon the mere name and authority of some man of high standing and reputation who has started it.

But this is an example which we do not feel inclined to follow here. It is clear to us that the advocates and supporters of the Single Gold Standard offend against the laws of sound reasoning when, having taken their stand professedly upon the broadest basis of the principles of free trade, they, at the end

of their case, suddenly turn round deliberately—to demand the adoption of a most illiberal and prohibitory law to put down the use of Silver in future as a Standard of Value! We cannot help looking upon such a proposition as one of the most flagrant and mischievous violations of the very principles upon which, up to that point, all their arguments in support of the Single Gold Standard proposed by them have been based.

It is upon this ground chiefly that we claim the right of saying: “the Paris Conference of 1867 should not be regarded in the light of a supreme authority whose decision in the matter ought to be considered conclusive and final.”

The Conference might have dealt with this question in quite a different spirit. Now that rapid international communication brings all nations into closer contact, and tends to modify the antagonistic position in which they were formerly placed to each other—so much so, indeed, that we see before us unanimity of action in many important social questions—the subject might have been considered in a spirit of higher intelligence. It would surely have been possible for the delegates to estimate the present and the future supply of the precious metals, and to base on such estimate some plan upon which, in some shape or other, the existing relations between Gold and Silver might have been upheld; and, even if the plan devised had turned out wrong afterwards, they would at all events, have been justly entitled to claim the credit of having done everything in the matter which human intelligence

could do to arrive at an equitable compromise. But, instead of this, they must, forsooth, adopt the clumsy and rough expedient of practically demonetising Silver!

Before proceeding further, we will briefly explain here the circumstances in which the Law of Legal Tender originated, and the grounds upon which it is based.

The three Metals—Gold, Silver, and Copper—have from times immemorial been always associated in the capacity of Circulating Mediums. Iron also has, indeed, occasionally been turned to the same use; it formed, for instance, in ancient times, the primitive money of the Lacedæmonians; and, in the beginning of the eighteenth century, Sweden found herself reduced to an Iron Coinage, through the wars of Charles the Twelfth. But then the use of Iron for this purpose has only been rare and exceptional; whilst the other three *Currency* Metals have notoriously kept their position from the earliest historic ages to the present time. Gold is by far the most valuable of the three; Silver follows next, though at a comparatively long distance, and Copper again is much less valuable than Silver.

It is upon this theory of a proportionate value between the three *Currency* Metals that the general notion is based which people not cognisant of the various causes and circumstances affecting the subject entertain of the monetary systems of the World. It seems only quite natural that the earliest personal experience made in life of the functions of money should lead to the belief in a certain intrinsic *Metallic*

value inherent in Coin, quite irrespective of the form and shape in which the State may issue it.

Finding that Twelve Pence in Copper are equal to One Shilling in Silver, and that Twenty Shillings in Silver are worth £1 in Gold, it would certainly seem quite logical to conclude that 120,000 Pence in Copper should be equal to 10,000 Shillings in Silver, or to £500 in Gold.

Taking this apparently rigorously logical conclusion for the basis on which rests the popular notion of monetary value, as represented by the three Currency Metals, there naturally arises, as a matter of practical consideration for us, the question of convenience. Five hundred Sovereigns in Gold may be carried in a small bag; the weight is only about 9 lbs. Avoirdupois; and the sum can be easily counted.

But the case is very different with 10,000 Shillings in Silver, which would require twenty bags of about the same size to carry them in, and would weigh something like 130 lbs. Avoirdupois, and take several hours to count; whilst, as for 120,000 Penny pieces in Copper or Bronze—why, *they* would actually require five hundred such bags to carry them in, and their weight would amount to 2330 lbs. Avoirdupois, which is a good waggon load; to count them would take some thirty odd hours! Now, this quantity of Coin only represents a value of £500. How much more striking then would the illustration be with £5000 or £50,000, to be paid in Sixpences or Threepences, instead of Shillings; and in Halfpence or Farthings, instead of Penny pieces!

In the payment of large sums, therefore, both Payer and Payee would be sure to find the Copper Coinage extremely inconvenient. The time and labour which such payments would necessitate being a matter of appreciable value, it is self-evident that, both theoretically and practically, Copper Coins are by that much less suited for Currency in a large way than Silver and Gold. Now, there might arise cases where an ill-natured debtor, wishing to give trouble and annoyance to his creditor, no matter at what amount of trouble to himself, might elect to make payment in Copper Coin. Would it be right and equitable to allow him to do so? The *law of legal tender*, which has been devised to meet the case, says *no*; and limits the faculty of making payment in Copper Coin to small amounts, ranging in different countries between Sixpence and two Shillings. Above this trifling amount no creditor is bound to accept payment in Copper: but he has an absolute right to demand Silver or Gold, as the case may be.

There can be no doubt but that the law of legal tender was suggested first through the necessity to make provision against this purely mechanical difficulty, and that in this sense its application is thoroughly justified, in so far as regards the Copper Currency. But it is a question whether the objection of inconvenient bulkiness can be said to apply equally, though in a much lesser degree, to Silver. In the Silver-valuing States, at least, no inconvenience on the score of bulkiness has hitherto been felt to attend the use of a full-value legal tender Silver Currency. Moreover,

the issue of a Paper Currency based upon an equivalent deposit of Silver Bars in the National Banks would completely settle the objection.

We now come to another consideration affecting our preconceived theory of the proportionate value of the three Currency Metals, viz., the influence which supply and demand must exercise upon their value.

Up to this point we have taken our stand upon the abstract meaning of the term value as derived purely and simply from the inherent qualities of the three Metals. We need not repeat here the reasons adduced in other parts of this volume, why Gold is intrinsically more valuable than Silver, and why Copper is the least valuable of the three Currency Metals. Suffice it to say that, if we take into due account the various Coinages of the World, we find that, as an almost universal rule, one part of Gold is held of the same value as about $15\frac{1}{2}$ parts of Silver,* and that one part of the latter is considered equal to about twenty parts of Copper.† We may take it for granted then that these fixed proportionate values of Gold, Silver, and Copper Coin are pretty generally

* England holds a somewhat exceptional position with regard to her Silver Coinage, which is issued at a nominal higher value than its intrinsic metallic worth. In England the proportion between Gold and Silver in the value of the Coinage stands as 1 : 14·15909.

† It must be borne in mind, however, that the British Penny piece, for instance, is in reality worth only one Farthing metallic value. The true proportion, in the relative value of Silver and Copper or Bronze, is about 1 to 80.

assumed to be naturally resulting from the intrinsic worth severally inherent in the three Metals.

Still it cannot for a moment be doubted but that the supply of, and the demand for, any one of the three Metals must exercise a certain disturbing influence upon their abstract proportionate values. It remains to be shown hereafter whether this theory of the influence of supply and demand upon the respective value of the three Currency Metals is absolute enough to enforce an equally absolute practice; or whether the Monetary System has a certain degree of elasticity in it tending to counteract, or to modify, at least, to some extent, in so far as these three Metals in their capacity of Coin are concerned, the natural action of the law of supply and demand.

Paying due regard to all other purposes to which Gold and Silver are generally turned, their chief and most important use is to serve as Coined Money. Now, what are the requirements of Society in this respect? It is generally conceded that the prosperity of Mankind is the greater in proportion to the quantity of a thoroughly sound Circulating Medium. There is no need then to endeavour to fix a limit to the amount of Coin in circulation generally; on the contrary, we should rather strive to promote its increase as much as practicable. But there is another question which forces itself upon our attention here—viz., the relative amount of Gold, Silver, and Copper Coin demanded by the requirements of Society. Is the natural action of the law of supply and demand sufficient to solve and settle this question, or is legislative interference neces-

sary to fix the relative proportions which the three Currency Metals should bear in the total amount of Coin in circulation ?

We believe that the question finds its natural solution in the action of the law of supply and demand, and that the requirements of civilised society afford sufficient indication to guide the Governments, who have to provide the Coinage, in fixing upon the proper relative amount of Gold, Silver, and Copper Coins to be issued.

If it were not for the restrictive curb which the natural action of the law of demand puts upon an over-large issue of Copper Coin, there need really be no limit assigned to it. The mere inconvenience of bulk and weight, and cumbersome accountantship, although unquestionably a most serious drawback, is yet not of sufficient importance to outweigh altogether the supposed safe guarantee of the possession of the Coin ; and the possessor of a thousand pounds need not much care, after all, whether his capital is represented by a bag full of Gold, or twenty bags of Silver, or an entire waggon load of Copper, so long as he is at liberty to pass the Coin away to others at any time for the same consideration which he has to give for it.

But the natural law of convenience steps in here, coming to the aid of the limitation proviso in the law of legal tender, to prevent the Market being swamped, as it were, by an unlimited supply of Copper Coin.

A reflection suggests itself here regarding the law of legal tender. We have seen (page 620) that

this law has a certain power of action upon the value of the Currency Metals, and that it can invest mere tokens with the attributes of full-value Coin. Could not this power, which we find exercised in the direction of a debasement of the Coinage, be exercised equally in an opposite direction?

We propose that advantage should be taken of this power of action of the law whenever an occasional disproportion between the supply of and the demand for either Gold or Silver,—which furnishes the advocates of the Single Gold Standard with their great argument in support of their theory,—may call for the exercise of it.

The advocates of the Single Gold Valuation chiefly rely upon these two great staple arguments of theirs:

That it is desirable that the Standard of Exchange should be as little as possible subject to oscillation of value, and that it is certainly inexpedient to subject it to the oscillations affecting both Gold and Silver.

That the system of Double Standard is unjust in itself, since it leaves the creditor at the mercy of the debtor, in allowing him to pay in the least valuable metal, &c.

Professor Levi reports these as the answers made by the Conference in Paris to a defender of the Double Standard (see page 637), and it will be seen that they are, in the main, the old maxims laid down by Chevalier (see page 635).

It would be idle for us to deny the correctness

of the axiom that the Standard of Value ought to be subject to as little fluctuation as possible, and that the restriction of that Standard to one material only, Gold, as proposed, seems likely to lessen the oscillations caused by supply and demand.

On the other hand it is just possible that, were the Gold Valuation universally introduced, and Silver universally demonetised, as suggested, it might be discovered that the employment of Silver as a Standard of Value is indispensable for the proper upholding of Gold as a Standard of Value, and that a distinct value should be assigned to each of the two materials, in order to maintain the balance, whenever fluctuations in the supply and demand tend to lead to oscillation in the value of either. Take this mutual check away, and the chances are that the fluctuations in the value of the sole material left in exclusive possession of the field, relatively to the price of commodities, will be much more serious than they are now. The example of England affords no conclusive criterion in this respect, for it remains to be seen whether the Universal adoption of the English system will not move away the foundation of that system.

Granted, however, as a matter of theory, that it is desirable to have a uniform Standard of Value all over the World, and that this desirable result may be achieved by the universal introduction of the Single Gold Valuation, the whole matter may be placed upon this issue :

Are the advantages which it is supposed the World at large will derive from the Single

Gold Valuation great enough to
counterbalance

the evil results which are sure to follow this revolution in the existing monetary systems, and the debasement and destruction, whether rapid or slow, of a great part of the Cash Capital of the World?

Is the theoretical crotchet of the paramount necessity of keeping the Standard of Value free from oscillations of price* sound and conclusive enough to

subvert altogether

our preconceived notion that intrinsic metallic value is the indispensable basis of a legitimate currency, supported as this notion is by the history of the past and by all the traditions connected with Silver as a material for money.

The pertinacity with which the advocates of the Single Gold Valuation cling to their theory is only another illustration of the blind and stubborn adherence *quand même* to a supposed absolute principle, which we so often meet with in life. Here is a principle, proclaim these advocates, and this principle must be carried out in spite of all that may seem to militate against it. We are willing to admit that the principle of the Single Gold Valuation theory is strong, and

* Not absolutely free, mark, which would be rather too Utopian, but only comparatively freer, in so far as this result is supposed to be attainable by confining the oscillations to one single material.

that the opposing considerations, taken singly, may be weaker, but taken collectively, they are strong enough to cross its path and to arrest its course of action. We so often find, in questions of social and political science, that the rigorous application of an apparently sound doctrine cannot be carried out after all, on account of opposing circumstances of greater weight and power.

The advocates of the Gold Valuation put their case in a more practical form when they say: That under the system of the Double Standard the creditor is at the mercy of the debtor, who may pay him in the less valuable metal of the two.

This means simply that, if there is more Gold than Silver the debtor will pay in Gold; if there is more Silver, the debtor will pay in Silver. This is putting the case rather strongly; in the practical transactions of life the term "at the mercy" of the debtor seems to us unsuitable. So long as we all agree, by law or otherwise, to regard a certain quantity of Gold as worth another certain quantity of Silver, and to exchange with each other upon the conditions of this agreement, nobody can properly be said to be at the mercy of another, so long as these conditions are faithfully fulfilled; the accidental circumstance that there happens to be more of the one than of the other material in our possession at the time, makes it quite natural that that material should serve as the Standard of Value of which we hold the largest quantity at the time.

But it is hardly in this sense that the objection is meant to apply; what the defenders of the Single Gold Standard really mean is this: When the supply of one material generally is disproportionate to the supply of the other, the material in over-supply will get cheaper, whilst the other will become comparatively dearer, and the debtor will make his choice between the two, and, of course, will elect to pay in the cheaper material. This, in fact, is the original point again upon which Chevalier and his disciples have started the whole subject. Gold has been in very abundant supply, consequently Silver has become dearer. We have refuted this assertion before, and believe that the present spasmodic supply of Gold will, in course of time, be fully balanced by the more gradual but steadier supply of Silver.*

The case as between creditor and debtor, although we are not aware that in the ordinary transactions of trade the creditor has ever practically experienced the supposed injury to which it is asserted the Double Standard exposes him, is nevertheless worthy of attention and consideration; for it must be conceded that differences in the value of Gold and Silver have

* Let us notice the singular position assumed here. The advocates of the Gold Standard assert: "Gold has become more abundant and cheaper, and accordingly *over-valued*, Silver is therefore dearer, and accordingly *under-valued*. If this were true we ought to introduce measures of raising the value of Silver. But will the introduction of the Gold Valuation effect this? We have shown that it will act in the contrary direction, and that, in violation of all principle, it will lower the price of Silver.

from time to time arisen. These differences, however, have always been more or less of a local character. In Germany, for instance, before the Californian Mines were discovered, Gold was frequently at an *agio* or premium over Silver. In France, whenever the demand for Silver for English account for India became urgent, the 5 Francs pieces were eagerly sought, and when required for shipment in large quantities, a premium up to 1 per cent. was paid for them. We assert that it was in both cases the Single Valuation which caused the evil; in Germany, the Silver Valuation; in France, the English Gold Valuation and the Indian Silver Valuation combined.* Had there been in force a system of Universal Coinage, England, France, and India being all three of them willing to take Gold and Silver upon the same understanding, no disturbance in the French Silver Coinage would have taken place without an immediate re-supply of the article from England. Bullion—Gold or Silver—would have been shipped, and the differences in value caused by the brisk demand would simply have appeared as an ordinary feature in Exchange transactions, a mere natural deviation from the Par of Exchange. Nobody will venture to assert that it was an over-supply of Gold which caused the withdrawal of the 5 Francs pieces. ✓

As advocates of the system of the Double

* The payment of a premium on Gold in Germany was not due to an over-supply of Silver; it was simply the result of a short supply of Gold.

Standard, we dispute altogether that differences in the relative value of Gold and Silver Coins occur upon any other than exceptional grounds, and maintain that in such cases an insufficient supply or a sudden withdrawal of the one or the other material is the cause, and not an over-abundant supply of either. In the usual local intercourse these oscillations have otherwise no influence, and from this point of view the small practical evil assumed in the position between creditor and debtor is after all reduced to a mere matter of theory.

To sum up our objections to the projected universal introduction of the Single Gold Valuation, and our views in favor of the maintenance of the Double Gold and Silver Valuation, and of its further extension and more universal adoption even, we repeat once more our firm conviction that there is no reasonable prospect of a sudden notable change in the actual proportionate value of Gold and Silver, unless it be brought about forcibly by the operation of an arbitrary prohibitory law; and, if the proposer and the supporters of the Single Gold Standard of Valuation profess to think they are entitled to demand the intervention of the law in favor of their crotchet, we surely have the greater and better claim to plead rather for the support of the law in favour of the maintenance of the actual proportionate value of Gold and Silver, for so long, at least, as no notable natural rise or decline in the market price of either of the two Metals shall come to demonstrate the fallacy of our views on this question.

Should differences in value declare themselves, the *law of legal tender*, as we have shown before, is strong enough to cope with them to a certain extent. No difference has as yet appeared exceeding the $\frac{1}{10}$ th part of the proved power of this law.

In view of the projected system of a Universal Coinage, which we ardently wish and confidently hope to see soon emerge into actual living existence out of the dream of social Reformers it has hitherto been, may we not venture to suggest how easy it would be, and how beneficial to the truest and best interests of society, to combine with the general introduction of this Universal Coinage the maintenance and the universal extension also of the Double Gold and Silver Standard of Valuation? Let the law fix the proportion of value between Gold and Silver, as the natural law of supply and demand has fixed it now for a long period of time already, at say, 1 to $15\frac{1}{2}$ or thereabouts; and, in the event of discrepancies arising in the Market in the proportionate value as fixed by the Monetary law, let the holder of that description of Coin of which the comparative Metallic value has risen in the Market, be entitled to claim a Premium on it, or, which amounts to the same thing, a small deduction off the amount to be paid. He is legally bound to pay either in the one or in the other Coin—in Silver or in Gold; if the Premium demanded by him for payment in the comparatively dearer or *under-valued* Coin is reasonable, the receiver will certainly not object to paying it, as he may profit by it in his turn in the same way. If, on the other hand, the premium demanded is too high,

the creditor has the simple remedy of claiming full payment in the other Standard of Value ;—so no injustice will be done in either case. Let the creditor, or receiver of Money, on his part, be entitled to exact a premium on all payments tendered in the temporary *over-valued* Metal.

The adoption of the Double Standard, modified by this Premium proviso, would satisfy all reasonable demands, and it would in reality respond to the theory of the single pivot of the Balance, as that one of the two materials which is over-valued for the time, or which, if we may express it this way, keeps on a relative Par with the price of all other commodities, assumes practically for the time being the function of principal Standard of Value ; whilst the other, which rises to a Premium, becomes technically a higher-priced article of merchandise. If no Premium is asked in either case, and both materials keep at their proportionate value, as fixed by the Monetary Law, it is clear that in that case they really constitute conjointly and together a single pivot on which the beam of the balance of value may safely be left to turn.

The system of the Double Standard of Valuation might thus justly be pronounced to be self-adjusting. No other intervention of the law would be required, except to fix the proportionate value of the two Metals for Monetary purposes. The Mint Authorities may regulate the respective issue of the Gold and Silver Coin according to the requirements of the public ; the demand of a premium or a discount on either will

afford valuable indications in this respect. The surplus of Gold or Silver, as the case may be, may be held in the shape of uncoined Bullion, as a solid guarantee for an issue of Paper Money—and the Banks might, so to speak, perform the functions of reservoirs into which the surplus might be absorbed. Such surplus would then be represented as Money by Bank Notes of the first-class, no matter whether founded on a Gold or on a Silver basis. The objection that there might be too much Gold Coin or too much Silver Coin would consequently fall to the ground.

It can easily be shown that the assumed consequences of an over-supply of either Gold or Silver are not met by the adoption of the Gold Standard. It matters not whether the proportion between Gold and Silver be fixed at 1 to $15\frac{1}{2}$ or 1 to $14\frac{1}{2}$, but some fixity of value must be adopted for the Coinage. A certain fixed quantity of Gold must be held equivalent to a certain fixed quantity of Silver, and the proportion once adopted cannot be altered. This, after all, amounts in reality to a Double Standard, and all the supposed influences of supply and demand would operate on the new proportion the same as upon the old. What would be gained thereby as a matter of practical value? Nothing at all! The alteration of the law would in reality have no other effect than that of limiting the use of Silver, and this again would simply lead to the revolution in the Monetary system, and to the destruction of the value of one of our two great Currency Metals, which we have before described.

In the face of so momentous a contingency it seems to us that more time should be given before a decision is finally made. Men of acknowledged experience should meet again in order to discuss the subject in a more systematic manner than it has been done before. With all due deference to the force of abstract theories, we think that every other element, theoretical and practical, should be taken into due account and consideration.

We think that England may well take the lead in this matter. She herself has the largest stake in it, for she represents, by her own Gold Valuation at home, and by the exclusive Silver Valuation in India, the two extremes of the position. The forcible introduction of the Gold Valuation will ruin, rapidly or slowly, the wealth of India.

We have no doubt that, upon a fair and common sense ground of discussion, a satisfactory result can be attained, and that an equitable compromise in the matter, or the full and open adoption of the Double Valuation will be the happy result.

CHAPTER V.

PROPOSAL TO ESTABLISH THE DOUBLE VALUATION IN
ENGLAND.

IN the preceding chapter the writer has stated and explained his views on the Double Valuation. It is his purpose now to treat this most important question with special reference to England.

Considering the actual decided tendency of the Civilised World to come to some general understanding upon the introduction of a Universal Coinage, a tendency which found its latest and loudest practical expression at the Monetary Conference held last year in Paris, it is quite clear that England will sooner or later have to bethink herself of remodelling her Monetary system.

In view of this coming change, when the question of contending Mediums of Exchange will have to be re-opened, and the Battle of the Standards fought over again, as it were, the author of this volume trusts that it may not be deemed altogether inopportune to suggest the desirableness of an impartial and unbiassed re-consideration of the whole question upon the broadest basis, which must necessarily comprise the great moot point of Gold Valuation or Silver Valua-

tion, or both combined. That the writer is a warm advocate of the last of the three courses must, by this time, be clear to every reader. He is quite aware that his views upon this subject run absolutely counter to the general tendency of the public mind in Great Britain; but he thinks, nevertheless, that the vital importance of the question to be decided, perhaps finally,—at least for ages to come,—will justify his claiming leave to add his mite to the general stock of facts and reasonings upon which the decision ought to be based. The exigencies of clearness and logical connection of the argument must plead his apology for an occasional repetition of facts, &c., that may have appeared before in the preceding Chapters.

The English Mint Law, as we know, makes 1 part of Gold equal to $14\frac{1}{2}$ parts of Silver, whilst the average proportion in all other parts of the World is as 1 to $15\frac{1}{2}$. The English Silver Coin is issued by the Mint at 66d per oz. Standard Silver, and the people are compelled to take it at that value, whilst the actual average price of the same quality of the metal in the Market, which is regulated chiefly by the universal price of the article, is only 61d per oz. Twenty Shillings worth of British Silver Coin, fresh from the Mint, when re-melted and exported as Bullion, will only on the average fetch 18s 6d. As we have repeatedly observed already, this discrepancy between the nominal and the actual value of the British Silver Coin is calculated to upset our preconceived notion that absolute intrinsic metallic value is the indispensable basis of a legitimate currency.

The law of legal tender, which *compels* us to take British Silver Coin at a higher than the actual intrinsic value of the article, simply converts this Coin, in so far as the excess of the nominal over the real value is concerned, into a *forced Currency* in the very worst form, as the State is not responsible for the difference; but the same law, on the other hand, limits the use of this over-valued forced currency to the comparatively small sum of £2 in any one payment. It provides that:—

The creditor is bound to take Gold in payment to any amount, and the debtor is bound to pay in Gold, at the Creditor's demand, to any amount exceeding £2.

The necessity of this limitation of the legality of a tender in Silver to the small sum of £2 is patent. It is not likely that people would consent to receive large payments in an over-valued Currency, which they would find it extremely difficult to pass on to others at the nominal value. Export merchants more especially, who have to send Silver abroad, would incur a loss of more than 6 per cent. if they were to receive Silver Coin here at its nominal value, to send it abroad.

There appears to be a singular contradiction of principle in a law which, whilst, by one of its clauses raising a certain article for use for certain purposes above its actual intrinsic value, by another clause prohibits the use of that article for the said purposes beyond certain most restricted limits.

Our greatest and gravest objection to the law

of legal tender, as far as the relative positions of Gold and Silver Coin are concerned, we base upon the principle of free trade. Why should there be this exceptional direct interference of the law between Gold and Silver in the capacity of Coin? Why should Gold be thus invested almost exclusively with the attributes of legal currency, to the prejudice of its compeer, Silver? As a question of theory, it cannot be denied that this interference of the law is contrary to the spirit of commerce and to the principles of free trade.

Before the year 1816 Silver Coin was the Standard Currency of the Realm, although Gold also played a most important part. The Silver Coinage then stood in the proportion of value of $15\frac{1}{4}$ to 1 of Gold. The result was that, before and during the wars with the French Republic and Napoleon Bonaparte, the Silver Coin kept rapidly disappearing from England, being exported to the Colonies and abroad as fast as it was issued from the Mint. A period of Paper Currency then followed in England, when all descriptions of Coin disappeared from circulation, by hoarding or otherwise; so that, when after many years, in 1816, the Country began to recover from the trouble and turmoil, and the misery of the long and most costly war, and it became necessary to re-organise the Coinage, the Statesmen and Financiers of the day, on whom the task devolved, had a fresh, clear field before them.

Remembering the loss inflicted upon the Mint in former times by the exportation of the Silver Coin, and finding, perhaps, that there was at the time a

larger amount of Gold available in the Country than of Silver, they adopted the former Metal as the foundation of the Coinage, and endeavoured to guard, at the same time, against a renewed exportation of Silver Coin, by fixing a higher nominal value than the intrinsic metallic worth upon the limited issue of Silver Coin, which was decreed henceforth to form simply a subordinate or subsidiary species of Currency. It was thus that the Single Gold Valuation was first introduced into England, coupled as a matter of necessity, with a law prohibiting the tender of Silver in payment wherever the amount of a claim should exceed the insignificant sum of 40 Shillings.

It is admitted on all hands that in 1816 there existed no Theory of the Single Standard of Valuation, such as had been fully elaborated in 1867. In the year 1805, Lord Liverpool wrote a letter to the King, in which he recommended the adoption of the Gold Standard in England, simply because Silver had ceased to be the Monetary Standard of the Country; and it was Lord Liverpool's influence which carried the day, in 1816, in favour of the Gold Valuation. Others wrote upon the subject afterwards, from time to time, defending the new system, and bringing forward fresh facts and reasonings in support of it; but in none of these works are to be found any but the faintest indications of the wide and universal import and bearing which the question was found to have assumed in 1867.

As we have already had occasion to remark, it was a sordid motive which mainly influenced the Statesmen and Financiers of the period, leading them to the

adoption of the Gold Standard, the partial prohibition of the use of Silver in the capacity of Coin, and the debasement of the subsidiary Silver Currency which was still permitted to exist. The measure adopted served not only as an effectual bar against a renewed exportation of Silver Coin from the Country, but it gave the State a clear profit, by way of seignorage, of 6 per cent. (more or less, according to the fluctuations in the Market price of the Metal) upon all Silver Coins issued by the Mint. We may fairly assume that economical considerations had their full share in the decision; after the costly wars neither the Ministry nor Parliament could resist the temptation of seizing upon this promising source of revenue. As a set-off, the State undertook to Coin the Gold Currency free of charge.

Such was the true origin of the adoption of the Gold Valuation in England, and the arbitrary suppression of a full-valued Silver Currency. It may be questioned whether an efficient check upon the exportation of Silver Coin from the Realm might not have been devised at much less cost to the true interests of the Country—for that these interests have been most adversely affected by the measures adopted in 1816 we are prepared to show.

We are fully aware that we shall be met here, at the very outset, with the usual declamatory phrases, about England being the richest and the most prosperous country; the Gold Valuation having worked very well; there being no need of a Silver Currency, as we have a sufficiency of Gold Coin for all our requirements; there

being plenty of Silver Coin provided to serve in the subsidiary capacity of change, &c., &c.

Granted that England may justly claim a high position for industry and wealth, surely no one will venture to assert that she has attained the highest practical pinnacle of prosperity, leaving no room for further improvement.

It is easy to assert that the Gold Valuation has worked very well in England; but this assertion does not prove that the Double Valuation would not have done better. At all events, it must have worked pretty well in olden times, since it was permitted to remain in force in England for more than four centuries (from 1257 to 1664). From the latter date down to 1717, Silver was the only legal tender, the value of Gold Coin fluctuating with the fluctuations in the relative worth of Gold and Silver in the Market. In 1717, however, it was deemed advisable to revert again to the old practice, and the Double Standard was restored, it being fixed then by law that the Gold Guinea should be taken as the equivalent of 21 Shillings in Silver, and conversely. But in this restoration of the Double Standard there was a grievous error committed, which could not but vitiate the result of the measure. The Gold Guinea was *over-valued to the extent of $1\frac{2}{3}$ per Cent.* The result of this error became, of course, the more and more apparent, as the real value of Silver, relatively to Gold, continued to increase during the greater part of last century. It is to this error, and its natural consequences, that we have to ascribe the unsatisfactory working of the Double Standard at that time, and

the tendency then prevalent to fuse or export the full-weight Silver Coin, which principally led, in 1816, to the adoption of the Single Gold Valuation.

It may appear also that we have plenty of Gold Coin for all our requirements, although in times of commercial distress and panic, the very reverse is loudly proclaimed; but be there enough Gold Coin, or be there too little, we can see no reason either way why we should not also have a sound and full-valued Silver Coinage.

That there is plenty of our debased Silver Coin issued to answer the subsidiary purpose of small change for Gold Coin, we willingly admit; but we think this ought not to be the only, nor the chief purpose for which the second of the Precious Metals should enter into our Monetary System. We would have Silver hold in our Currency an independent position of its own, equal to that of Gold, in proportion to its relative value.

The plea that the system introduced in 1816 has answered very well, belongs to the same category with the averment that England is a prosperous country; and may, accordingly, be met by the same rejoinder as the latter, viz., that, granting the Gold Valuation to have worked pretty well, there can barely be a doubt but that the retention of a full-valued Silver Currency, in conjunction with the Gold Valuation, would have worked still much better. We think it can be shown that the Gold Valuation has been injurious to England's interests in her foreign trade as well as in her internal financial economy.

The injury inflicted upon the foreign trade of England by the monetary measures of 1816 is both direct and indirect. The value of Silver Bullion in England rests entirely either upon the basis of the continental Silver Coinages, or upon the demand for Silver for India. Whenever there is no demand for India, Silver Bars go to the Continent at the price of $60\frac{1}{4}$ d per ounce. When a demand arises for India, we have to buy back the article at $61\frac{3}{4}$ d to $62\frac{5}{8}$ d per ounce. These differences in our selling and buying prices, which amount to $\frac{3}{4}$ to 2 per cent., will often occur at intervals of only a few weeks between, and have to be calculated on many millions sterling. Now if we had continued to coin a sound full-valued Silver Currency, suitable for India, at a cost of about $\frac{3}{4}$ per cent. for Mintage, it is obvious that we should have effected a considerable saving upon the Silver exported to the East. The loss incurred here is a direct loss, which has to be borne by the trade of the country, and on an average it will be found much in excess of the full charge for the Mintage of Silver. But the indirect loss is still more important. The Silver is required chiefly by the Colonies of Great Britain, and by the nations with which we trade. If England were in possession of a full-valued Silver Coinage of her own, suitable for India and the East generally—similar to Rupees and Dollars—which she might send out to her Eastern Dependencies, does any one doubt but that such a Coinage would have exercised a very considerable moral influence in favour of the ruling country, drawing and binding her Eastern Depend-

encies closer to her ? This consideration is altogether independent of another important item in the matter, viz., the much higher rates of Coinage which the Mints at Calcutta and Hong Kong are compelled to charge merchants.

Our present English Silver Coin, violating as it does, by its artificially raised nominal value, every sound principle of International Exchanges, is totally unfit to serve as a Medium of Exchange in our trade with Foreign Countries. England never holds a stock of Silver Bars. As soon as she is compelled to export Bullion, she has only Gold to give, and when the stock of that metal becomes low, alarm is created. Other countries, however, besides Gold, have Silver to fall back upon.

The injury inflicted upon our home trade by the substitution of a limited debased Silver Currency for a free full-valued Silver Coinage may not be so very patent, and there might be a difficulty to calculate it and express it in figures. Still there can be no doubt but that there is a kind of instinctive objection on the part of Bankers and Merchants to hold much of this over-valued currency ; they always endeavour to get rid of it as soon as they can, and it generally falls ultimately into the hands of the labouring and the poorer classes. It does not seem quite right and conformable to the strict dictates of honesty that this Medium of Exchange of the poorer classes should not offer the same full guarantee of intrinsic value which the Gold Coinage offers to the wealthier classes,

and which the popular idea of Money justly demands. We are prepared to hear it argued, in defence of this state of things, that the poor are at liberty to exchange their Silver for Gold, or to lodge their savings in the Post Office Bank. But such pleas do not effect the patent fact that the Silver Currency, which is necessarily restricted, in a measure, to circulation among the poorer classes, is intrinsically unsound; its actual value falling short of what it professes to be. The poor save only in small sums, and deal only in small sums—Half Sovereigns and Sovereigns are not always handy to them. Let it be borne in mind also that a Penny or a Shilling may be of as much importance to them as a Pound or a £100 Note to the wealthy; and, furthermore, that a Shilling in active circulation will produce more Exchange of Benefits than a Sovereign lying dormant.

The glaring contrast existing in this country between enormous wealth and abject poverty may be attributable, in some measure, to the British Coinage Laws, and the undue favour shown to Gold. The financial weakness of our humbler classes, which becomes painfully apparent, despite the Saving Banks, in which the industrious and economical workman deposits a portion of his earnings, is certainly a very striking fact. It is possible that the lack of a proper full-valued Silver Currency ought to be reckoned among the causes of this sad state of things.* Viewing

* That Silver is the material in which the poor prefer to hold their savings is generally admitted. India is a striking example of this. In France also this has been made manifest. Enormous

the question on the most general grounds, we find that Great Britain certainly loses the advantage of the greater part of the capitalising power of Silver, by the arbitrary and most unfair prohibition of the unrestricted employment of that material in the capacity of an intrinsically sound and full-valued Currency.

In venturing to suggest the desirableness of such a radical alteration in our present Monetary System as the introduction of the Double Standard—the Gold and Silver Valuation—would necessarily require, it is by no means our intention to call for the withdrawal of our present *small change* Silver Coinage from circulation. Let the Florin (which is now our largest Silver Coin, since Crowns and Half Crowns are no longer struck) continue at the present valuation of 1 part Gold to $14\frac{1}{2}$ parts Silver. Indeed, France has followed our example in this respect, by coining her 2 Francs and Franc pieces, and the smaller subdivisionary pieces, about $7\frac{1}{2}$ per cent. below their nominal value. So our present Silver Coins might continue to

amounts of French Silver Coin have been exported to the East, until it was supposed that almost all the large Silver pieces had disappeared from the country. Yet there is still Silver to be had, and whenever shipments are ordered *via* Marseilles, they can be effected at a moderate premium. There is no doubt that the Coin comes chiefly from the hoardings of the poorer classes. It is quite true that hoarding is a proceeding not in accord with the modern principles of Banking, but no matter whether, from this point of view, it be considered a virtue or a vice, it is a feature which must not be lost sight of in the consideration of this question; for wealth is wealth, whether hoarded or thrown freely into circulation.

be used, under the law of legal tender, as small change, and the profit made by the Mint out of this Coinage might be applied for other purposes—say, for instance, the withdrawal of light Coin from circulation.

We make this suggestion on the ground of convenience, because on principle we are still opposed to the debasement of even the small Silver pieces. At the same time we must admit that the law of legal tender seemingly permits a debased issue of this kind, profitable to the State, and that it would be convenient to maintain the present system of small change rather than effect a complete revolution.

What we would propose is this :—Let an English Silver Dollar piece, of the exact intrinsic value of Four Shillings, be struck, and let this Silver Dollar be declared legal tender, within more extended limits than the present Silver Coinage.

This Silver Dollar would be the exact equivalent of the Silver 5 Francs piece, which continues to be coined in France of the full Metallic value, and is as much legal tender as the Gold Coin. It would be lighter and more convenient than the old Crown piece, and would form an appropriate intermediate link between the Florin and the Half Sovereign. It would possess all the attributes of a sound Coin, and afford the fullest guarantee to the holder. We have no doubt but that its introduction would confer a signal benefit upon all classes of society.

The only parties who might urge a reasonable objection to this introduction of Four Shilling pieces in Silver would be the Bankers and others who have

to receive payments in large sums. Accustomed as they are to Gold Coins, easily handled and weighed, according to the present fashion, they might say: Silver is too bulky, and we should suffer great inconvenience if we had to receive and make payments in it. In the first place, Bankers are even now compelled to use Silver, and the additional trouble which the use of a Dollar piece would give would not be so great as imagined, for Gold will always much preponderate. The Mint might easily regulate the use of Dollars in accordance with public convenience, and need not exceed certain limits. Such limits, in fact, can be narrowed to a point just sufficient for the due maintenance of the Double Valuation. But it must be admitted that, in order to maintain the character of the Double Valuation, it is necessary to invest the Dollar with the right of payment, as it may frequently occur that Bankers are compelled to take in large quantities of the Coin. A modification might be made in the law of legal tender which would meet this case fairly. The legal tender in Dollars might be limited to the amount of £100 or £200 (upon the principle that £100 or £200 is a weight which *one* person can carry). It might further be enacted, that in making such payments, the payer be compelled, at the payee's demand, to furnish the Coin in rolls of 25 or 50, or in bags of 50 or 100 pieces each. Bankers would have little difficulty in dealing with Silver in this form, and the restriction so provided would lessen the objection against Silver money, as a legal tender, that might otherwise be urged by

them on the score of unreasonable trouble given them in the receipt of payments in Silver Coin.

The introduction of this full-value Dollar, as the link between our present Gold and Silver Coin, would afford a fair compromise of the whole question of Single or Double Valuation. Gold would still continue to remain the principal Standard, and Silver, kept still to some extent under the restriction of the law, would at all events regain its original importance, and maintain its value by the proposed extension of the limit of tender for the Dollar piece.

If this suggestion were carried out, England would thereby be enabled to hold a stock of Silver Bars, upon which a healthy Paper Currency might be founded. Our surplus of Silver now goes abroad ; it is true that in return for it we are supposed to receive Gold and other Commodities on favourable terms. Nevertheless, the conversion of such surplus of Silver into actual Money, immediately available for the purposes of our home as well as our foreign trade, is clearly preferable to returns in Gold or other commodities. A large stock of Silver held at home would enable us, whenever India demands remittances in Silver, to supply her from our own stores, so that the profit which Continental Banks now make on the Exchanges with England for supplies of Silver would remain in our own hands. A stock of Silver of this kind would consequently meet a pressing want ; it might easily be kept up as the basis of a Paper Currency system of the first class, which would in itself form an important addition to our national wealth.

We think we may also venture to state our belief that the adoption of the Double Valuation will be found the only sure and safe means of attaining that most desirable object—the introduction of a universal system of Coinage. Limiting our consideration of this branch of the subject, by way of illustration, to the introduction of a uniform system of Coinage between Great Britain and her Indian Empire, we find that in the one country the Gold Valuation prevails, whilst in the other the Silver Valuation holds almost absolute and exclusive sway. Every attempt to introduce Gold into India has hitherto failed; the Gold Mohur has been Coined for a great many years, but it has made but little progress as yet among the people of India. It is now proposed to introduce the Sovereign; is it at all likely that this piece, far more unsuitable for division into Rupees than the Mohur, will make greater progress? We very much question it. The opinions and assertions of those who are anxious to place India under the Gold Valuation, rest upon very weak grounds indeed, and are clearly based upon wishes rather than facts.

True, the introduction of the Gold Valuation into India might be accomplished by the force of law; Silver might be declared to be no longer legal tender. A measure of this kind, supposing it were actually carried into effect, would simply result in the demonetisation of Silver, and the total destruction of the value of the cherished circulating medium of the Indian people. No Statesman would ever dare to recommend such a course, and it is not likely that our

Government would ever lend a willing ear to so preposterous a suggestion.

The prejudice of the East Indians against Gold might, perhaps, be overcome gradually by the introduction of the Double Valuation all over the World. The adoption of a fixed proportion of value between Gold and Silver Coin would show the people that each of the two Metals is equally trustworthy for all the purposes of International Trade. But to attain this end, it is indispensable that the Double Valuation should prevail universally; and, more especially, that England, as the supreme head and ruler of the Anglo-Indian Empire, should set the example.

The introduction of the Silver Dollar or 4 Shillings piece might lead to the adoption, in India, of the Sovereign and its sub-divisions. The 4 Shillings piece might be declared of the value of 2 Rupees, or, which is the same thing, the Rupee might be declared to be worth 2 Shillings.

Here, however, a difficulty presents itself. The Rupee, at the average price of $60\frac{7}{8}$ d per ounce Standard of Silver (which is the true rate, as we have shown page 289), is worth 1s $9\frac{7}{8}$ d only, whilst the half of the proposed Dollar at the same price is worth 2s. The Dollar would consequently contain more Silver than two of the present Rupees. But this is precisely the same position which the 5 Francs piece in Silver now holds towards the Franc Coinage of 1867, from 2 Francs downwards, and the Florin pieces and the lower Silver Coins of England would stand in the same relation to the Dollar.

The English Florin is of the Silver value of 1s 9 $\frac{1}{4}$ d, but it passes for 2s; why should not the Rupee, which is also worth 1s 9 $\frac{1}{8}$ d, pass for 2s or Half Dollar?

This is, in fact, the same plan which we have suggested for England, with regard to the Dollar and the smaller Silver Coins. The Rupee Coinage would be invested with a subsidiary character, and would be legal tender to the extent of £2 only, whilst the new Silver Dollar, or piece of 2 Rupees, as well as the Gold Coin of the system, would be full legal tender to any amount.

This plan of altering the Monetary system of India seems to be very simple, and it tallies well with other Monetary systems. (See next Chapter, —on Universal Coinage). But we must not lose sight of the fact that the bulk of the Coinage of India consists of single Rupee pieces, and that it would therefore be difficult at once to assign a subsidiary character to the Rupee. We think, however, that it can be done with a little management. The Mint in Calcutta might, simultaneously with the introduction of the law of legal tender, cease to coin Rupees for the public, issuing them and the smaller Silver Coins in future only at its own discretion, with a seignorage or duty upon the Coinage, in the same way as the British Mint. The Dollar might at the same time be struck and circulated as legal tender, together with the Gold Coins. It is clear that the prices of commodities must follow this alteration, which involves, of course,

a corresponding alteration in accounts.* The refusal of the Mint to coin Rupees, except at its own pleasure and discretion, would protect the Dollar against all attempts at melting down for the purpose of re-coinage in the shape of Rupees. If the Natives should take to hoarding the Dollar, on account of the proportionately larger amount of Silver in it, this would only tend to bring it very speedily into favour as a Standard of Value.

The large mass of the Rupee Coinage now in circulation, so far from suffering a serious depreciation, would actually have conferred on it a nominal increase of value, to which the Natives certainly are not likely to object; whilst the law of legal tender, restricting the use of the old Rupee to small payments, would confine the effect of this nominal increase within very narrow limits. Amongst the Indians themselves the Rupee might continue to circulate as a national Coin, and we think that in so extensive a community, where small change plays so important a part, a very large amount of subsidiary Coinage will always be required. Should it turn out, on experience, that the quantity of old Rupees in circulation is really too large, it may possibly happen that the holders thereof may have to bear the loss of about 9 per cent., the difference between the actual value of $21\frac{7}{8}d$ and the

* There is unquestionably some inconvenience involved in this change; but this is unavoidable, and would equally attend any other manner of change. The Dollar might be called a piece of two Rupees, or a Double Rupee, or an Imperial Rupee, in contradistinction to the "Company's Rupee."

nominal value of 24d; this loss, however, is infinitely less than would be that caused by the forcible introduction of the Gold Valuation. In any case it would only be partial, as a large proportion of the old Coinage would still necessarily remain in use. The danger of this loss itself would tend most effectively to destroy in the Native mind the prestige of the present Rupee, and to facilitate the success of the new British Sterling system. But we really do not think that, if the Mint ceases to Coin Rupees, and the introduction of the 4 Shillings or Double Rupee piece is pushed with proper energy, there will be too much subsidiary Coin for small change. The large portion of Silver in India is held in the shape of Bars and Pieces, upon which the proposed alteration in the Coinage system would exercise no disturbing influence whatever, except in so far that it might tend to bring to light the hoarded wealth of the country, to see it gradually absorbed in the Universal Coinage, and thus distributed all over the World.

In the next Chapter, when discussing the plan proposed last year at the Paris Conference, to adopt the Franc system as the basis of the International Coinage, we shall show how well this Silver Dollar would work in with either of the systems of Universal Coinage suggested.

CHAPTER VI.

UNIVERSAL COINAGE.

THE Monetary Conference held in Paris, in 1867, besides deciding in favour of the universal adoption of the Single Gold Valuation, resolved also :—

To adopt the 5 Francs Gold piece, with its decimal sub-divisions, as the basis of the projected new Universal Monetary System. France having concluded a Monetary Convention with Italy, Belgium, and Switzerland, there exists already between these countries a perfect system of International Coinage, upon the basis of the French Franc system. The chief object of the Conference was to endeavour, if possible, to assimilate the different Coinages of all other nations to this same Franc system, either directly and absolutely, or gradually, through the medium of one of the pieces of that system, selected to serve as the type of the new International Coinage, and to accustom the inhabitants of Foreign Countries by degrees to its ultimate introduction in its entirety.

The Monetary Union between France, Italy, Belgium, and Switzerland, represents an aggregate population of some 68 Millions. This respectable array of figures, combined with the fact that this

Monetary Union has taken the lead in the matter, certainly entitles the system adopted by it, and proposed to the other Nations, to great consideration. It is only reasonable to demand that other Nations, each of them singly much less numerous, and each with a different Monetary System, should rather make an endeavour to follow in the wake of the Union, than selfishly insist upon forcing upon all others their own particular system as the basis of the desired International or Universal Coinage.

Even we in England, however strongly we may be attached to our Pound Sterling System, if we desire to share in the benefits sure to result from the general introduction of a uniform Currency, must make up our minds to assimilate our Coinage to that of France, as the best means of facilitating the attainment of the great object in view.

The present actual Money value of the British Sovereign or Pound Sterling is Fs. 25·2215, the Coin being 916·66 fine. All we have to do is to strike a Coin 900 fine,* of the exact value of Fs. 25, or about $\frac{7}{8}$ ths per cent. less than the present Sovereign, which reduction of $\frac{7}{8}$ ths per cent. represents the odd 22·15 Centimes in the Pound. This new Sovereign of ours would be exactly 28 per cent. heavier than the present 20 Francs piece, and we should thus

* This reduction in the Standard must not be mistaken for a debasement of the Coin. The change from 916·66 to 900 fine is not brought about by the abstraction of Gold, but simply by the addition of a little more alloy. A Coin 900 fine will, therefore, be heavier than a Coin of equal value 916·66 fine.

possess a piece of the exact value of 25 Francs, which would pass current in France, whilst the 20 Francs piece might be taken here at the rate of 16 new Shillings (for the Shilling also would necessarily be affected by the change). The French Government has already taken the lead in this matter, having lately issued a new Gold Coin of the value of 25 Francs, in deference to us and the Americans.

To people unacquainted with commercial operations the excess of 22·15 Centimes over Francs 25, in the value of the Sovereign as now coined by our Mint, may seem so fractional and unimportant that they will be inclined to ask, perhaps, why we should require to have a new Coin struck, instead of simply keeping to our old Sovereign, generously dropping the few paltry Centimes over-value. But in the eyes of Bankers and Merchants the matter assumes a very different aspect. True, upon £1 the difference is only a little more than 2d; but upon £100,000 it amounts to something like £880.

Still the change can be brought about without any very considerable disturbance of our present system. If the Government will but agree to effect the alteration, it is only necessary to stop the Coinage of Sovereigns and Half Sovereigns for a time, until the Gold Coin in circulation shall have become light by wear. We know that light Sovereigns are cut, and that the holders of them have to bear the loss. When the proper time has arrived, let the new Coinage be issued, and let the old Sovereigns be withdrawn from circulation, by declaring that they have ceased to be

legal tender, or let them be declared simply of the value of 20 new Shillings.

The lack of new Sovereigns might unquestionably cause some inconvenience, and speculators would be induced to buy up all the full-weight old pieces. But, as it is to be presumed that, in the event of the adoption of a Universal Coinage, the British Mint will not continue the present system of coining Gold gratis, but will charge for the expenses of Coinage, as all other Mints do, such a speculation would not prove very profitable in future.

Upon the whole, the plan would work with the least possible effect upon the prices of Commodities, and upon the state of International Exchanges. Changes of this kind cannot possibly be effected without some inconvenience, and people must make up their minds to bear their fair share of it.

With the Pound Sterling reduced to the exact value of Francs 25, Great Britain approaches the Franc Valuation closer than most other countries. It is to be hoped that she will be willing to carry into effect this part, at least, of the International Coinage proposed.

In a speech delivered 7th February 1868, at Liverpool, Mr. Göschen made the following remarks :—

“Gentlemen, in your report which has been read, you allude to the subject of International Coinage. In this matter you must allow me to say that I am not yet quite of your mind. Admitting all the advantages of a uniform system of Coinage, I cannot but feel that it is a doubtful matter, seeing how the question affects the National creditor, and, indeed, all contracts, whether the immense disadvantage of depreciating the value of the Sovereign, as is proposed, be it by ever so little, does not outweigh the benefit of a

community of Coins. If we could get rid of all fluctuations of Exchange, that would, indeed, be a very agreeable result. But, even if the piece of Twenty-five Francs were made equal to the Sovereign, and the two Coins were absolutely identical,—were Two Sovereigns in fact,—the Sovereign in France would not necessarily be equal to the Sovereign in England. It would still depend upon the balance of trade, upon the demand for Gold for remittance to England, or for remittance to France; you would never get rid of the fractions. But let me propose a compromise to the Chamber. Let me suggest another subject for your consideration, and one of some degree of importance. It is this—if you cannot have International Coinage, can you not work for an International Code with reference to Bills of Exchange? Bills of Exchange are of far greater importance for paying debts in foreign countries than Coins; and at present there is as much difference in the laws of various countries relating to Bills, as in their respective national Coins. For instance, in England three ‘grace days’ are added on to every Bill. In Russia ten grace days are allowed. In most parts of the Continent grace days have been abolished altogether. Let them be swept away everywhere by common consent, &c. &c.”

Mr. Göschén’s strictures on days of grace allowed on Bills of Exchange are quite just; but we must candidly confess our inability to see the exact connection between the *compromise* here suggested with reference to Bills of Exchange and the subject of International Coinage. However, we will not dwell upon this incongruity, but proceed at once to the consideration of the more important part of Mr. Göschén’s declaration, viz., the *asserted immense disadvantage of depreciating the value of the Sovereign*.

It is quite true that we shall have to reduce the Sovereign from its present relative value of Fs. 25·2215 to Fs. 25, a reduction amounting to 0·88 per cent.

This reduction, of course, would affect contracts

and payments stipulated in the old Sovereign. With respect to payments for goods, a balance of value may be easily arrived at at once, but as regards other contracts, such as Mortgages, the State Debt, &c., the question seems certainly more difficult to solve to the entire satisfaction of all parties concerned; for it is self-evident that, if at the time when the contracts, &c. were effected, the value of the Sovereign stood at Fs. 25·2215, payments under such contracts, &c., made subsequently in a new Coinage of the value of only Fs. 25, would be an injustice to the creditor, and inflict an injury upon him. Let it be borne in mind, however, that the rate of Fs. 25·2215 is the *supposed* full legal value of the Sovereign, but not the actual value. Sovereigns are full legal tender, with the Mint Remedy for fineness of $\frac{1}{16}$ th carat, and at the weight of 122·5 grains, instead of 123·247 grains, which two items together amount actually to 0·91 per cent., making the Sovereign practically worth only Fs. 24·99, or about $\frac{2}{3}$ ths per mille less than the proposed value of Fs. 25. So far there would be no injustice in the case as regards future payments upon old contracts in the new Coin. A Mint Remedy, both for fineness and weight, must, however, be allowed for the new Coin as well as for the old; but, as we have demonstrated in our Criticism on the British Mint, pages 555 and 556, there is no need to continue the present excessive allowance. One per mille for fineness and one per mille for weight is quite sufficient, and, with this allowance, the Mint may easily manage to turn out an almost perfect Coin.

The actual reduction of the Gold value of the new Sovereign, as compared to the old, would thus be less than 2 per mille. Creditors paid upon old contracts, &c. in the new Coin would consequently sustain a loss of 4s upon £100, making a loss of £20 upon £10,000. The State, with the sanction of Parliament, has the right to levy taxes in whatever manner or shape it may be deemed convenient; and this loss sustained upon payments received in the new Coin may be looked upon in the light of a tax of less than $\frac{1}{4}$ th per cent. for one year. The payment of this slight tax, which, moreover, falls only on contracts of old date, would settle the question once for all. Besides, the tax is not actually levied, being after all simply a nominal matter, and compensation is provided in other directions. Acts of Parliament, whether relating to questions of Policy or Taxation, will often affect private interests in a similar way. Taxing Bills of Exchange, for instance, to the extent of $\frac{1}{2}$ per mille may be considered an arbitrary measure of this kind, which falls upon a class; yet nobody will dispute the principle of Policy and Taxation involved in the Stamp Duty. And Bills of Exchange are short-lived instruments; yet they bear this charge of $\frac{1}{2}$ per mille easily; why then should contracts of long existence, such as are likely to be affected by the proposed change in our Coinage, be unable to bear with the same ease a trifling charge of 2 per mille, to be paid for *once only*, for the purpose of facilitating a change so beneficial to the public interest?

Let us hope that Mr. Göschel, upon whom the City of London looks as an authority in financial matters,

will take a less narrow view of the question of International Coinage, and that he will be induced to lend his powerful assistance to the accomplishment of this change, which cannot but prove of universal benefit.

We have said that the Paris Conference resolved to adopt the 5 Francs Gold piece, with its decimal sub-divisions, as the basis of the projected new Universal Monetary System.

The principal objection to this Coin is its smallness. This objection was strongly urged at the Paris Conference against its adoption as the basis of the system; and a suggestion was made to make the 10 Francs Piece the normal basis, under the name of Ducat, dividing it into 100 parts, each of them equal to about One Penny or Two Sous. Under both systems it was proposed to coin Gold pieces of 5 Francs, 10 Francs, 20 Francs, up to 100 Francs, or Imperials; with Silver Coins from 2 Francs pieces down to the smallest practicable sub-divisionary pieces, retaining the present Copper Coin, and restricting the use of the Silver and Copper Coinage within certain narrow limits by a law of legal tender.

The Universal Coinage would accordingly be based entirely upon the Franc system, with its decimal divisions.

Upon this point we have to offer a few observations here :—

1st. It is generally admitted that the 5 Francs Gold piece is too small.

2nd. The Franc is divided into 100 Centimes; now the Centime is a mere nominal coin; for, though the piece has been coined, it is not used in actual circulation. The smallest sub-divisionary piece in actual circulation is the Five Centimes piece, or Sou. It strikes us that we ought not to use in accounts a unit which cannot be passed from hand to hand.

3rd. The decimal system is no doubt the most convenient for accounts; still it must be admitted also that the duodecimal system practically gives more numerous fractions, which certainly makes it more suitable for the requirements of trade. Why should not some plan be devised then, which, whilst fully maintaining the decimal system, may also afford some of the advantages derivable from another system of division?

4th. The Franc has but very few corresponding equivalents in the principal Coinages of other Nations; whilst the case is very different in this respect with the Shilling, as we shall have occasion to show in the course of this Chapter.

Upon these considerations we venture to submit a modification of the plan adopted by the Paris Conference, which we think would suit England better, and also most other nations.

Accepting the proposed piece of 5 Francs as the basis of the system, we suggest that, instead of dividing it into 5 parts (Francs), it be divided into 4 parts (Shillings), which would give us the following set of Coins for Great Britain.

GOLD.

Sovereign . . .	= 20 Shillings, or 25 Francs.	
Half Sovereign . .	= 10 ,,	12·50 ,,
Quarter Sovereign.	= 5 ,,	6·25 ,,

SILVER.

Dollar	= 4 ,,	5 ,,
Florin	= 2 ,,	2·50 ,,
Shilling	= 1 ,,	1·25 ,,
Half Shilling . .	= $\frac{1}{2}$,,	0·62 $\frac{1}{2}$ Cents.
Fifth Shilling . .	= $\frac{1}{5}$,,	0·25 ,,

The Florin to be divided into 100 parts, each part about equal to the present Farthing.

It is admitted on all sides that the 5 Francs Gold piece is too small; it is easily bent, and requires careful handling. A 900 fine Gold piece of the value of 5 Shillings would be 25 per cent. heavier and larger, and would accordingly be by so much less objectionable on the score of smallness.

Most nations have a current Coin about equivalent to the English Shilling. In Austria, for instance, there is the Half Guilder; in Prussia the Third Thaler, in the United States of North America, and the other Dollar-issuing States, the Quarter Dollar; whereas for the Franc, we find only the Quarter Rouble in Russia. In those coinages in which the Shilling finds no equivalent there is no corresponding Coin either for the Franc. Taking it altogether, the Shilling is much more frequently and numerously represented in other Coinages than the Franc, which may fairly be considered an indication that the size of the Shilling and of its sub-divisions is generally thought more suitable.

The Dollar might, indeed, be divided into five parts, instead of four ; but the latter sub-division is the one practically in use now. The half franc is still a fair Coin, but the quarter franc in Silver, which is of smaller size than our threepence bit, is decidedly too diminutive for practical purposes.

The division of the Franc into 100 Centimes is simply nominal, in so far as the actual Centime piece is concerned, which has indeed been coined, but is hardly ever seen in actual circulation. And in accounts we find $2\frac{1}{2}$ Centimes practically set down as the lowest figure ; balances under this amount being ignored, and over the amount counted for the full Sou.

Now $2\frac{1}{2}$ Centimes are about equal to a Farthing, and most nations have a Copper Coin of about this value ; we believe that this Coin is the best adapted to supply the lowest practicable Unit. True, Farthings are not much seen in the higher walks of life ; but they constitute, nevertheless, an important Medium of Exchange among the humbler and lower classes of Society.

We may observe here, incidentally, that the term Unit applied to the Pound Sterling or the 5 Francs piece is logically wrong, as the Unit, in the proper sense of the term, is the lowest sub-division of the Coinage. It matters not whether this Unit be called Farthing, or half Sou, or Pfennig, but the word Cent cannot correctly be applied to it.

Premising, as an additional argument of some weight in support of our views, that the introduction of the present Franc, and the system based thereon,

would necessitate greater changes in most of the existing Coinages, and would lead to greater disturbance, and more intricate complications in the accounts, than would be the case with our proposed Shilling system; we will now proceed to enter into a more detailed elaboration and elucidation of our plan.

Taking the Farthing, then, for the ultimate Unit of our proposed new System of Coinage, we get the following scale of Coins, as set forth in the subjoined Table:—

COPPER.

1 Unit	1 Unit.
1 Sou or Halfpenny	2 Units.
1 Penny or Double Sou (or Décime)	4 „

SILVER.

$\frac{1}{5}$ Shilling . . . = 5 Souds	10 Units.
$\frac{1}{2}$ „ . . . = 12 $\frac{1}{2}$ „	25 „
1 Shilling . . . = 25 „	50 „
1 Florin . . . = 25 Pence or 50 Souds, or	100 „
1 Dollar . . . = 50 Pence or 100 „ , or	200 „

GOLD.

$\frac{1}{4}$ Sovereign . . = 5 Shillings	250 Units.
$\frac{1}{2}$ „ . . . = 10 „	500 „
1 „ . . . = 10 Florins	1000 „
2 Sovereigns pieces = 10 Dollars	2000 „
4 „ „ = 20 „	4000 „

BANK NOTES.

5 Pound Notes . = 5 Sovereigns or 25 Dolls.	5000 Units.
10 „ „ . = 10 „ or 50 „	10,000 „

&c., &c.

The 100 Pound Note would therefore be = 100,000 Units.

The 1000 Pound Note = 1,000,000 „

It is immaterial what names may be given to these Coins, &c.; as regards the Unit, however, a word must be invented that will suit most languages. Farthing, Half Sou, Heller, Pfennig, &c., are not suitable therefore; we suggest the term, "Mark," being a short, expressive word, with pretty nearly the same meaning attached to it in most of the leading languages of Europe.

Thus, our new Coins might be named :—

COPPER.

1 Unit, Farthing	1 Mark.
2 Units, Halfpenny	1 Sou.
4 „ , Penny	1 Penny.

SILVER.

10 Units, $\frac{1}{2}$ Shilling	1 Dime.
25 „ , 6 Pence	1 Quarter.
50 „ , Shilling	1 Shilling.
100 „ , 2 Shillings	1 Florin.
200 „ , 4 do. . . .	1 Dollar.

GOLD.

250 Units, 5 Shillings	1 Baron.
500 „ , 10 do. . . .	1 Ducat.
1000 „ , 20 do. . . .	1 Sovereign.
2000 „ , 2 Sovereigns	1 Royal.
4000 „ , 4 „	1 Imperial.

Most of these terms are now in actual use in some Coinage or other. The words Sou, Franc, Imperial, may, in this respect, be called French; Penny, Florin, and Sovereign, English; Dime, Quarter, and Dollar, American (with this distinction, however, in so far as the word Quarter is concerned, that we propose to apply this term to the fourth part of the Florin, in-

stead of the fourth part of the Dollar) ; Florin and Ducat, German ; whilst the words Baron and Royal are generally applicable.

Respecting our suggested combination of the duodecimal with the decimal system, we may remark that the latter, pure and simple, does not afford so much scope for all kinds of divisions and fractions as the combined system. If the Coinage were based, for instance, upon the piece of 10 Francs, the hundredth part of this would be equal to one Penny ; if upon the piece of 5 Francs, this latter would have to be divided into 100 Sous ; and neither the Penny nor the Sou is the admitted smallest Unit of its respective scale, whereas the division of the Florin into 100 parts gives us this ultimate Unit.

With the Five Francs Gold piece for the basis of the system, as settled by the late Monetary Conference, and the division of this Coin into Five Parts,—with the French Franc system in short,—we obtain the following scale of Coinage.

COPPER.

1 Sou piece	.	.	.	.	.	1 Sou.
2 Sous or 1 Décime	.	.	.	.	.	2 Sous.

SILVER.

$\frac{1}{4}$ Franc piece	.	.	.	.	.	5 Sous.
$\frac{1}{2}$ "	.	.	.	.	.	10 "
1 "	.	.	.	.	.	20 "
2 Francs piece	.	.	.	.	.	40 "
5 "	.	.	.	.	.	100 "

GOLD.

5 Francs piece	.	.	.	.	.	100	Sous.
10 "	.	.	.	.	.	200	"
20 "	.	.	.	.	.	400	"
50 "	.	.	.	.	.	1000	"
100 "	.	.	.	.	.	2000	"

We will now compare the two systems, the Franc and the Shilling, upon the point of the respective facility severally afforded by either for paying fractional sums.

PROPOSED SHILLING OR NEW FRANC SYSTEM.*				PRESENT FRANC SYSTEM.	
	Shilling	Unit.		Sous.	
COPPER,		$\frac{1}{20} =$	1	0	
"	"	$\frac{1}{10} =$	2	1 = $\frac{1}{20}$	Franc, COPPER.
"	"	$\frac{1}{5} =$	4	2 = $\frac{1}{10}$	" "
SILVER	"	$\frac{1}{4} =$	10	5 = $\frac{1}{4}$	" SILVER.
"	"	$\frac{1}{2} =$	25	10 = $\frac{1}{2}$	" "
"	"	1 =	50	20 = 1	" "
"	Shillings	2 =	100	40 = 2	Francs "
"	"	4 =	200	100 = 5	" "
GOLD	"	5 =	250	100 = 5	" GOLD.
"	"	10 =	500	200 = 10	" "
"	"	20 =	1000	400 = 20	" "
"	"	40 =	2000	1000 = 50	" "
"	"	80 =	4000	2000 = 100	" "
BANK NOTE	"	100 =	5000	2000 = 100	" BANK NOTE.

It will be seen that our proposed new system affords a more extensive range of fractions in the lower Coins, and that it contains also the figure 4,

* It matters not whether we use the term Shilling, or New Shilling, or Franc, or New Franc, or any other term that may be deemed suitable.

imported from the duodecimal system, giving us thus amounts of 1, 2, 3, 4, 5, 10, 20, 40, 80 and 100 New Francs, whilst the present Franc system gives us only amounts of 1, 2, 5, 10, 50 and 100 Francs. The piece of 25 Units, or $\frac{1}{4}$ Shilling or New Franc, and the smallest Gold Coin of 250 Units are also useful introductions. The present Franc system has the 5 Francs piece both in Gold and in Silver, and the 100 Francs Note by the side of the Gold piece of 100 Francs. In our proposed new system the Silver Coins stop at 4, the Gold Coins at 80, the Bank Notes beginning at 100, which clearly affords a much larger scope for combination of payments.

The adoption of our proposed plan would give the least trouble to England (and to the United States, &c.) The present Sovereigns and Half Sovereigns would soon get worn to the condition of light Coin, when it will be time to issue the 900 fine new Sovereigns and Half Sovereigns of the value of 20 and 10 new Shillings (25 and $12\frac{1}{2}$ Francs), and to strike the Baron or Five Shillings piece in addition, also 900 fine of course.

In the Silver Coinage the only new piece would be the legal tender Dollar, 900 fine, and of the full metallic value of Four Shillings. Our present Florins, Shillings and Sixpences might be left unaltered, as they are only slightly affected by the proposed change, and the fractional difference resulting is more than amply covered by the fictitious over-value of these small Silver Coins.

Considering the small intrinsic value of the Copper

Coins, the present 12 Pence, or 48 Farthings to the Shilling, may easily be turned into $12\frac{1}{2}$ Pence, or 50 Farthings.

Our proposed new Shilling system would, on the other hand, cause very little inconvenience to France. As we are willing to adopt the Standard of 900 fineness, and the decimal division of the Coinage, with the introduction into it simply of the figure 4, the change suggested by us would affect accounts in France to a clear fraction of exactly 25 per cent., the value of the proposed new Franc being just 25 per cent. higher than that of the present Franc. An alteration involving a perfectly clear and definite fraction like this may be much more easily effected than the alterations involving smaller or larger *odd* fractions, which would be required in adopting other Coinages to the Franc system.

The present 5 Francs piece is the exact equivalent of the Dollar of our proposed new system. The smaller French Silver Coins, from 2 Francs downwards might be retained until used up by wear, and the new Florins and Shillings might be introduced alongside of them. The present French Gold Coins might also be retained, as pieces of 20 Francs, 10 Francs, and 5 Francs, or 16 Shillings, 8 Shillings, and 4 Shillings. The new Piece of 25 Francs is already coined, so there need simply be two new Gold Coins, of the value respectively of $12\frac{1}{2}$ and $6\frac{1}{4}$ Francs.

Even the French, we think, may be willing to concede that the retention of two Coins of 5 Francs, the one in Silver and the other in Gold, and of a 100

Francs Gold piece alongside a 100 Francs Bank Note, is not so convenient as would be the possession of a Silver piece of 4, a Gold piece of 5, an Imperial in Gold of 80, and a Bank Note of 100 parts.

England being a most important party required to join in the proposed International and Universal Coinage arrangement, having, together with her Colonies, the largest interest in the matter, has surely a clear right to assert the weight of her influence, and to bring it to bear to the fullest extent upon the ultimate decision of the question.

To resume briefly, then, we hope that Great Britain, whilst willing to make all reasonable concessions to facilitate the universal adoption of a uniform system of Coinage, and to yield, accordingly, in deference to France and other countries, as well as on the score of the greater soundness of principle in the practice, upon the three following points, viz. :—

1. The decimal division of the Coinage, with the modification here suggested ;
2. The adoption of 900 as the Standard of fineness ; and
3. The reduction of the value of the present Sovereign to Frs. 25,

will on her part strenuously insist upon the retention of a Shilling basis for the division of the Coinage. She may do this with the more right and the greater weight, since, as has been shown here, the pieces representing the smaller sub-divisionary fractions of the Shilling are of a more suitable size, and that the Shilling

is found better adapted than the Franc to the entire Monetary System, in Copper, Silver, Gold, and Paper.

A brief remark in conclusion. As it may appear that the Author has taken a somewhat decided stand in his advocacy of the Double Valuation, and its restoration in England, and of a system of Universal Coinage based upon the Shilling instead of the Franc division, he begs to disclaim any intention on his part to speak dogmatically on this most important subject, or to pronounce, *ex Cathedrâ*, on the great interests involved therein. His only desire throughout has been to place the matter before his readers in the clearest light, and to invite a maturer deliberation on it, and a calmer, more impartial, and, especially, more exhaustive discussion of it, than it has as yet received at the hands of the Financial Authorities whose views the Author has ventured to dissent from.

In the consideration and decision of the important question of the contending Standards of Valuation, and the organisation of a proper System of Universal Coinage, all Nations should be equally willing to sacrifice some of their cherished National prejudices, for the sake of the great principles involved, and the signal benefit which mankind at large will reap from an equitable settlement of the matter,—and England, surely, will not be behind hand with *her* contribution of concession and conciliation.

ERRATA.



PAGE 169—Account Sales of Five Bars: the charge for the Assays should have been 4s 6d instead of 3s 6d as stated.

PAGE 357—13th and 14th lines from bottom, for "Peso Corriente" read Patacon.

PAGE 475—3rd line from bottom, for "0.90" read 2.45, and correct total.

PAGE 487—8th line from bottom, for "London" read Paris. 6th line from bottom, for "in Paris" read on London.

1. The first part of the document is a list of names and dates, which appears to be a record of some kind. The names are written in a cursive script, and the dates are in a more formal, printed style. The list is organized into two columns, with names on the left and dates on the right. The names are: John Smith, James Brown, William Jones, and Thomas White. The dates are: 1810, 1811, 1812, and 1813. The list is followed by a section of text that is also written in cursive. This text appears to be a description of the events that took place during the period covered by the list. It mentions the names of the individuals listed and describes their actions and the circumstances surrounding them. The text is written in a clear, legible hand, and it provides a detailed account of the events. The final part of the document is a signature, which is written in a cursive script. The signature is followed by the date 1814. The entire document is written on a single sheet of paper, and it appears to be a historical record of some kind.

3 14 1 4

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